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HENRY V. POOR, Editor.

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Saturday, April 14, 1849.

P. S. DEVLAN & CO's Patent Lubricating Oil.

THE Subscribers invite the attention of Railroads, Steamboats, Machinists, etc., to the above article of Oil; they are prepared to supply it in any quantity. Certificates of its superiority over all other oils, from several of the largest Works and Railroads, can be seen at our office. KENNEDY & GELSTON,
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Railroad Matters in Kentucky.

In our last issue, we gave the very interesting statement of the President and Directors of the *Louisville and Frankfort* Railroad Co., in regard to their road. This is the only line of railway in progress in the State, with the exception of the short line of 3¼ miles, from the city of Louisville to Portland, passing the rapids in the Ohio. Kentucky, however, is imitating the example of her neighbors, and is moving toward something like a comprehensive railway system for the State.

It is now proposed to extend a line of railroad from Louisville to some point near the mouth of the Ohio: another line from Lexington to the eastern line of the State, so as to connect with the Virginia roads: and another line from Louisville to the Tennessee line, in the direction of Nashville. Authority has been granted already, to extend the line of the *Mobile and Ohio* railroad, from the Tennessee line to the mouth of the Ohio river. A glance at the map of Kentucky will convince any one that the carrying out of these plans will have the most salutary effect upon all the great interests of that State. Kentucky and Virginia should go hand in hand in their public improvements.

We have recently been put in possession of a copy of a letter from B. C. Grey, Esq., of Hopkinsville, Ky., a highly distinguished member of the legislature of that State, to Gov. Brown of Tennessee, on the subject of railroads in the west, which letter the Governor requested permission to publish. Notwithstanding its length, our readers will feel gratified that we give it so much space in the Journal.

NEAR NASHVILLE, Dec. 28, 1848.

Mr. E. G. Eastman, Editor of the Union:

Sir: I enclose to you a letter addressed to me by a member of the Kentucky Legislature, on the subject of "the Mobile and Ohio railroad," and its extension eastward through the interior of Kentucky. Some of the views presented by him are so bold and striking, and display such an interest in, and acquaintance with the subject, that I think the interest of the public requires its publication. The Mobile road in point of importance is to our fellow citizens of the western part of the State, what the Chattanooga and Hiwasse roads are to the people of east Tennessee. The communication is so full that I will not trouble you with any comments of my own, especially as my views were so fully expressed in favor of that road to the last Legislature of the State. With the advantages of Columbus as the terminus of the Mobile road over other places I have not the means of now forming an opinion, but concurring with the general views of the writer as to the importance of the proposed works to the different parts of the country through which they would pass, I respectfully ask its publication, if you can spare the space in your valuable paper.

Very respectfully,
Your ob't serv't,
AARON V. BROWN.

—

BOWLINGGREEN, Ky., Dec. 23d, 1848.

Hon. A. V. Brown:

Dear Sir: Will you do me the favor to furnish me with a copy of your message to the Tennessee Legislature at the commencement of its last session?

I am very solicitous for the early completion of the railroad from Mobile to Columbus, Ky., near the mouth of the Ohio river, and intend writing some communications in advocacy of that enterprise, with a view of securing an investigation of its valuable and important bearings upon the interest of the whole United States, and wish to avail myself of some extracts from your message, for, if I remember aright, you were in that message a friend and advocate of this line of improvement. I wish to quote from the highest authority.

If you will examine a report made by the Hon. Mr. Breese to the Senate of the United States, you will be convinced that the "Illinois Central railroad" will soon be completed from Cairo to Chicago. Over one million of dollars has already been expended upon this road, in grading, &c.

The completion of this road from the mouth of the Ohio *direct* through the *centre* of the State of Illinois to Lake Michigan, will certainly deprive St. Louis not only of the lake trade and of the trade and business of the interior of Illinois, to which she is so largely indebted for her growth and prosperity, but will also cut off from St. Louis all the travelling passing from the mouth of the Ohio by way of the Lakes to the northern and eastern cities and *so vice versa.*

The contemplated railway from New Albany to Alton would, during low water and ice, draw freights and travellers from Albany and Alton to this "Central road," thence down to the *mouth of the Ohio.*

Will the city of St. Louis permit this to be done? No, the concentration of capital and of business men of that city—the energy, enterprise and intelligence of her business men and prominent citizens, and the immense interest they have at stake, will immediately force to its completion a railroad from St. Louis, by Springfield to Chicago, or to an intersection of the Cairo and Chicago road.

Nor would a road from Chicago to St. Louis only, stopping at that city, at all compete with the Chicago and Cairo road in securing the "trade of the Lakes" or of the interior of Illinois, nor the travel and transportation, to and fro, between the mouth of the Ohio and the Lakes.

But St. Louis will be compelled, for self-preservation, to secure a continuous railway the *entire* distance from the Lakes, by St. Louis to the lower Mississippi, opposite to Columbus.

St. Louis, the great central depot of the vast agricultural and mineral productions of that immense and fertile region of the upper Mississippi, Missouri and Illinois rivers, and the dangers and losses, the delays and hindrances resulting from the unsafe and uncertain navigation between the mouth of the Ohio and St. Louis, would, even without their being stimulated to do so, by the rivalry of this central road, induce the capitalists of that great and growing city to complete a railway connection of St. Louis with Columbus (150 miles) as soon as the road is completed from Columbus to the Gulf of Mexico (460 miles.)

Again, the railroads from Vicksburg by Jackson, Brandon, Montgomery, (Ala..) &c., to an intesection with the railways of Georgia and the Carolinas, will soon secure a continuous line, extending from Vicksburg through the South Atlantic States to the eastern cities. A large portion of the southern travel will then pass by *this* route east.

Of those persons coming up by the Mississippi river, (or from Charleston, Savannah and Mobile,) by this railroad to Columbus, nineteen-twentieths of

them going to the northern and eastern states, cities and watering places, would pass from Columbus by St. Louis, or through the centre of Illinois to the Lakes, and thence by railroads east, in preference to going up the Ohio, or through the interior of Kentucky and Tennessee.

Most assuredly such will be the course of travel. To a very great extent that is even now the case, and every year increases the tendency of trade and travel in that direction. The "Michigan Central road," (connecting Lakes Michigan and Erie,) will be completed by the beginning of 1849, and the estimate is that by the end of 1849, travellers will pass from Chicago to Boston in two days and a half, on railways the *entire* distance.

The completion of these lines of railroads will take from the Ohio river nearly the whole of the travelling passing between the north and the south, thus missing altogether the centrally situated states of Kentucky and Tennessee.

Will Kentucky stand *idly* looking on until the completion of such vast enterprises, and, without a struggle, permit herself to be cut off from all participation in their advantages? No, never.

A railway communication will soon be complete from Vicksburg east, and equally certain is it that the two roads from Columbus to the Lakes will be pressed forward to a speedy completion.

But, sir, the great state of Kentucky, will not be *idly* looking on. She can never be a passive spectator when so deeply interested; but that energy, enterprise and public spirit which so strikingly characterises this great Commonwealth, both individually and as a state, will induce her to immediately press forward with rapid progress an enterprise of vastly greater magnitude and importance, both to herself, to the whole of the middle states, and those of the south and west, than any to which I have alluded, by commencing a railroad from Columbus, by Hopkinsville, toward Louisville and Lexington, through the centre of Kentucky, and extending on through the very heart of the whole Union, until it becomes linked with the "Richmond and Kanawa," and with the "Baltimore and Ohio" railways, at or near their western termini. It is now hoped that the Baltimore road will incline west as far as Parkersburg before it intersects the Ohio river.

The "Great Central Branch" will form the most valuable and important link in the great chain of railways "now being projected, to connect the eastern and middle with the southern and western states, by running a line of railroads to the south and east of the Ohio river, of which the Baltimore and Ohio road is the commencement."

It will be perceived, by an inspection of the map, that this Central Branch connecting Columbus with the Richmond and Baltimore roads, will, because of its course and direction, be the most convenient, advantageous and popular line for persons passing from the eastern, northern and middle states to and from the south and west, and will, by reason of its lateral branches and connections with other great lines of travel, immediately become the greatest thoroughfare in the Union.

There are no other railways in the Union that approach a comparison in importance with the "Mobile and Ohio road" and its two branches, extending from Columbus, the one toward the northwest and the other towards the northeast.

Passengers and freights from Charleston, Savannah, Mobile, New Orleans and the interior of the whole south, will arrive by the main trunk at Columbus, whether destined for St. Louis and the west, or for Louisville and the east.

Travellers from the east will pass from the Baltimore and Richmond roads along this "Great Central Branch," through Kentucky and the centre of the Union, to Columbus, whether destined for Mobile and the south or St. Louis and the west. In like manner will the railroad from St. Louis bring freights and passengers to this point, whether destined to Mobile or to Louisville.

Again, every steamboat destined from St. Louis to Pittsburgh, or from Pittsburgh to St. Louis, may bring freights and passengers for the south as far as Columbus.

By a report made by the Hon. Wm. S. Bodley, of Vicksburg, in 1845, it is estimated that there were then over 450,000 persons annually travelling upon the Mississippi river (1,233 daily.) It cannot be doubted, but that the greater certainty, regularity, speed and safety of railroads over steamboats, would induce the larger portion of travellers passing the mouth of the Ohio, to take this road; for, let it be remembered, that this road, so far from running parallel with the Mississippi, cuts off 540 miles in a distance of 1000.

		MILES.
Distance from Columbus to New Orleans, by river,		1000
" " "	Mobile, by railroad,	460
" " "	St. Louis, by river,	235
" " "	" by railroad,	150
" " "	St. Louis to New Orleans, by river,	1235
" " "	Mobile, by railroad,	610

From Columbus to Mobile, by railroad, in 23 hours, thence to New Orleans in 14 hours. The trip from New Orleans by the best boats to Columbus has been made in four days, though six days is about the average time for good boats.

From Columbus to St. Louis, by railroad, (150 miles) in 7 hours. From Columbus to St. Louis, by the water, requires from 2 to 3 days usually; for the dangers to navigation between St. Louis and Columbus prevent boats from running after night, even when there is seven feet water on the bars. It is very certain, therefore, that, all travellers between St. Louis and Columbus, would pass by the railroad in preference to risking steamboat navigation upon this, the most dangerous portion of the Mississippi river.

As the Mobile road forms a junction with the Tennessee river at or near Savannah, Tenn., (331 miles from Mobile, 129 from Columbus) a branch road might be made from Nashville, intersecting this road at Savannah—"thus avoiding altogether the Cumberland mountains, which present many obstacles of a serious kind to any other approach to Nashville from the sea ports on the south Atlantic coast."

By this branch Nashville "would have a much more direct communication, with a better sea port for her purposes, and by far, over a more favorable route than *via* Chattanooga.

Distance from Nashville, via Chattanooga, to Charleston, 591 miles.

Distance from Nashville, via Chattanooga, to Savannah, (Geo.,) 580.

Distance from Nashville, by Savannah, (Tenn.,) to Mobile, 431 miles.

From Nashville, by Savannah, (Tenn.,) and the Mobile road to the crossing of the road from Montgomery towards Vicksburg, would also connect Nashville with Vicksburg in about 448 miles.

This branch, too, would doubtless be extended from Savannah by way of the Lagrange and Memphis railroad to Memphis.

From Nashville, by Savannah, (Tenn.,) to Memphis, 240 miles.

From Nashville, by Savannah, (Tenn.,) to the mouth of the Ohio, 229 miles.

A railroad from Nashville due north, 50 miles, would intersect at Russelville, Ky., or at Bowlinggreen, with the road from Louisville to Columbus. Thus, this branch of 50 miles would connect Nashville with Louisville, and (by Columbus) with St. Louis.

		MILES.
Distance from Louisville, by Columbus, to	Mobile	725
" " "	Nashville & Cha'ston,	779
" " "	to Savannah, (Geo.,)	765
" " "	and Savannah, Tennesse, to Mobile,	616

This branch to Savannah, (Tenn.,) being upon a much better direction for travel, and connecting with sea ports, cities, and other roads so desirable for Nashville, will assuredly secure its construction.

South Carolina first attempted to obtain railway communication with the Ohio river through east Tennessee. But the Legislature of Kentucky refused to grant such privileges as she desired. Her prominent statesmen were next in attendance upon the Mississippi Legislature to obtain such charters as would secure a railroad from Charleston to Vicksburg, and those roads are now in progress of construction.

Georgia and Carolina, in the meantime, extended their railroad to the Tennessee river, but at a point so *high up* that stream as does not afford them a desirable communication with the Ohio river and the markets of western produce.

The Chattanooga road will connect them at Nashville, with the Cumberland, but they will not yet be at a market which produces the bagging, bale rope, pork, flour, and other supplies of western production which they demand.

The great and prominent object of Georgia and the Carolinas is to effect a *direct* railway communication between the South Atlantic ports and the Mississippi and Ohio rivers.

The Mobile and Columbus road connects with Charleston and Savannah by means of the railroad from Vicksburg across by Montgomery, &c., and whilst the Chattanooga road affords to Charleston an uncertain communication through the Cumberland river, for a *portion* of the year, with but a *part* of the west, the Mobile and Columbus road opens throughout the *entire* year the commerce of the whole west, and is upon a much better direction for travel.

Therefore, the Georgia and Carolina railways will be made to connect with the mouth of the Ohio by the construction of a branch road from or near Atlanta to the Decatur and Tuscumbia road; thence extend that road from Tuscumbia, west, to an intersection with the Mobile road.

The connection of Charleston and Savannah, (Geo.,) and of every branch and link of those southern railways, with the mouth of the Ohio by the most direct route, will add 50 per cent. to their present annual receipts, and will, in every respect, be so advantageous as will induce those several railroad companies to unite for the construction of the branch from or near Atlanta to intersect the Mobile road, at a point on said road, about 180 miles from Columbus 50 miles south of Savannah, Tenn, and 30 miles west from the Tuscumbia road.

This link from Atalanta to the mouth of the Ohio will open a direct communication of the whole interior of the south, with the whole west; for there the Ohio and Mississippi rivers and their numerous tributaries from the Alleghanies and also from the Rocky Mountains, concentrate their vast waters; thus, securing to this point, as is justly remarked in a report by a committee of the Illinois Legislature, all those "advantages of commercial position which few cities of the earth can rival."

It is here that "20,000 miles of navigable waters converge, draining a territory unequalled for fertility upon the surface of the globe." It is this point which all those southern roads are most interested in connecting with.

A glance at the map will show that Columbus is the nearest point of the Mississippi river to Charleston and Savannah, and is also the nearest point of that river to Nashville and Louisville. From the 'Reports' of Louis Troost, Esq., and of Judge Bodley, the distance—

From Charleston (by intersecting the Mobile railroad,) to Columbus, 625 miles.

From Savannah, (Geo.,) by the Mobile railroad, to Columbus, 600 miles.

From Charleston, by Nashville, to Columbus, 764 miles.

From Savannah, (Geo.,) by way of Nashville, 750 miles.

From Charleston to Vicksburg, by railroad, 900 miles.

From Savannah, (Geo.,) to Vicksburg, 670 miles.

The trip will be made from Columbus to Charleston in about 31 hours, and from Columbus, by Charleston, to Washington city, in a little over 3 days. From St. Louis, by Columbus to Charleston, 775 miles, and brings down the time of travel between St. Louis and Washington city to about 4 days.

My argument is, that, the inevitable result to Kentucky, from the completion of those two roads from Columbus to St. Louis and the Lakes, and the one from Vicksburg, east, will induce such a conviction throughout *this whole state* of the value and absolute necessity for the branch from Columbus to the Baltimore road, as will secure its completion by the time the cars commence running from Columbus to Mobile. This central branch, linking together, as it will, all those roads at Columbus with the Baltimore and Richmond railways, and passing through the interior of this state from the extreme west to the extreme east end of it, will thus secure in its advocacy and support every interest and every section of Kentucky.

There will be no wrangling about "sectional divisions"—for "Southern Kentucky," the "Green River Country," the "Middle Division," "Northern Kentucky," and our two rival cities, Louisville and Lexington, will, all, all be united alike in interest and policy for its completion. It can, and it will be constructed.

The Mobile and Ohio Railroad penetrates a region of country cut off from water communication, but which *this* road will make the garden spot of America. This main stem runs a straight course of 460 miles from *north to south*, through different degrees of temperature, through different varieties of soil, and mineral and agricultural productions, passing the entire route without crossing a single navigable river or mountain, and without any rock excavations, "through the richest portions of four of the most productive states of the Union, and by its lateral branches renders tributary to its inexhaustible beds of bituminous coal, iron and marble."

Although "passing through different state governments, it will be governed throughout by the same laws, subject to the same institutions, and will be under the same management and responsibility. The Mobile and Columbus railroad thus forms a connecting chain between people of every character, and climates of every description, and becomes the channel for distributing their various productions."

This railroad connects the best harbor and most central port upon the Gulf of Mexico, and the most inland and nearest point upon that Gulf, with the mouth of the Ohio river, which the Hon. Mr. Breeze in a report to the United States Senate, remarks, "is one of the most remarkable points on the globe—the confluence of the Ohio with the mighty Mississippi—a spot to which all the great rivers of the west converge as to a centre, and where most of the commerce, bound on their bosoms, must pass on its way to the ocean, or from state to state—whether from the Missouri or Upper Mississippi, the Wabash or the Ohio, the Cumberland or the Tennessee."

Columbus is the only point on the Mississippi river where the banks on either side never fall in, nor form sand bars, by the washing of the river. Owing to the peculiararities of the banks, the course of the river, and attendant circumstances, those banks never have been and never will be washed off or added to. The Hon. Mr. Breese, in a report to the United States Senate, remarks, in reference to the mouth of the Ohio, that there "terminate the alleys of the Tennessee and the Cumberland, which come down from the south of it to meet their kindred streams from the north—of the Ohio from the east, which throws its branches to the Alleghany Mountains, and almost to the borders of the Lakes on the other—of the Upper Mississippi which ascends almost from the Frozen Sea to the north, and of the Missouri with numerous branches stretching to the Rocky Mountains in the west."

An able and experienced engineer examined all the points upon the Mississippi river, from Cairo down to Mills Point, 35 miles, in the fall of 1847, and after he had reported the results of his investigations to the Mobile and Ohio railroad company, they, in their report of April last, say of this road, "It has three termini at points which command immense trade and traffic—the southern terminus being at Mobile—the middle terminus on the Tennessee river, at a place below all obstacles to navigation, and where the route will obtain the trade of the valley upwards of 800 miles in length, and the northern terminus at Columbus, near the mouth of the Ohio, *the best harbor on the Mississippi*, without exception, where the road will be accessible to the trade and travel of eight states and the western territories.

But the more *sensible, intelligent* and *thinking men* will recollect that the vast domain, bounded on the north by the 49th degree of latitude, south by the Gulf of Mexico, and east and west by the Alleghany and Rocky mountains, known as the great Mississippi valley, "is the most highly favored region on the globe."

Sensible men will reflect that this Mississippi valley, no longer a frontier, is now the centre of the Union, the "bone and sinew" of the American republic; and while its main artery continues to roll its mighty waters to the gulf, the artificial veins of railroads must be constructed by the enterprise of man at every point of this valley, to distribute its abundance with the expansion of its population."

Intelligent men will remember, too, that the Mississippi valley is an area of about 1,500,000 square miles, and contains 960,000,000 acres of land—that the "richest staple articles which give animation to the commerce of the whole world—cotton, rice, sugar, hemp, tobacco, corn, etc., may be considered as indiginous to portions of the country."

Intelligent men will know that all the crops of the United States are estimated to be worth $591,400,000—and of these products the New England States contribute only $58,000,000—that Indian corn appears to be the great staple of the country, the quantity for this year being worth $144,573,000—the hay crop is estimated to be worth $128,000,000—the wheat crop $53,514,000—the product of the dairy $42,360,000. When it is considered that the country is as yet comparatively uncultivated, and its resources very partially developed, no one can fail to be impressed with the enormous capabilities of our country.

Intelligent men will know that the area of the country drained by the Mississippi and its tributaries, is about six times as large as the old Thirteen States, and that, "compared with the present condition of the New England and Middle States, it could sustain, in similar wealth, prosperity and comfort, 60,000,000 of inhabitants. A population, however, of 230 to the square mile, similar to that of Great Britain, would give to the valley of the Mississippi the enormous number of 345,000,000 of human beings."

Intelligent men will know that 65 years ago, wandering tribes of Indians, and 20,000 French and Spanish, were the only inhabitants of the Mississippi valley; but by the census of 1840, the population was 8,434,759, and may now be estimated at from twelve to thirteen millions. The value of the products were, in 1840, estimated at $750,095,920; the descending trade of the Mississippi at $120,000,000 and the ascending at $100,000,000. The population of New Orleans has more than doubled itself within a period of ten years. In 1802, its population was but 10,000 Spanish and Creole, and in 1840 it contained 102,193 inhabitants.

Intelligent men will know that the population of St Louis, which was in 1840 less than 17,000, is now nearly 60,000, and that the city of Chicago, which in 1830 was an advanced military position, is now a city with a population of twenty thousand. Its imports are of the value of $2,641,852 annually, and its exports to the value of $2,297,299. From a report made to the last Congress, the northern tier of counties in Illinois have increased in population in the last twelve years one thousand per cent. Their productions of wheat have increased in the last seven years from 500,000, to near 3,000,000 bushels.

Intelligent men will know that the road from Cairo to Chicago passes through a region, which, for mineral wealth, extent of coal fields, and agricultural resources, may challenge the whole world;—but more than half those lands being destitute of timber and means of transportation, there are now within six miles of this line of road 1,746,415 acres yet belonging to the government, all of which has been in market for an average of 22 years.

Intelligent men will know that the cars are already running upon ten miles of the road from Chicago towards Galena, and that in 1851 the trip will be made from Galena to Boston and New York, in three days' time—that this line of railroads, extending along our northern border, from Galena to Boston, has now lateral branches of railroads and canals extending south, from this northern border and reaching down to the Ohio river.

All enterprising men will agree, that while the cities of Boston, New York, Philadelphia, Baltimore Richmond, etc., and also those of Canada, are extending their iron arms into the valley of the Mississippi, and uniting in their efforts to open new passes through which to draw its abundant and varied productions, and it is the interest of the whole west to unite in building railways from north to south, not for the purpose of superseding the rivers, but by connecting the interior of the northwest with the interior branch railroads of Georgia, Carolina, Alabama, etc., to open a direct and speedy communication between the north and south, and ramifying to every important section of the Mississippi valley.

Reflecting and patriotic statesmen will appreciate the value of these roads to the general government, in transportation of her mails, and the supplies and munitions of war. To her armies they will secure "concentration of force, and celerity of movement."

The Statesmen of Kentucky—those who aspire to be her politicians and the guardians of her public interests, will be convinced that the growth, wealth and prosperity of this commonwealth, will be greatly more promoted by a railroad through her interior connecting with the railroads at Columbus on the west, and with those of Baltimore and Richmond at the east, than by all the other improvements that can ever be constructed within her borders.

Those railways "will multiply and furnish innumerable markets with produce and merchandise now limited to one. They will enlarge the circle of trade, by giving greater speed, certainty and security to the traveller and the trader, and will bring into closer communion the social, political and commercial relations of communities of common origin, common institutions, and common sympathies."

I am, dear sir, with great respect and high regard,
Your obedient servant.
B. C. GREY.

In giving place to so extended a communication, we feel persuaded that no one will regret the space it occupies. The opening of a line of railway thro' the centre of Illinois, from Lake Michigan to the mouth of the Ohio, and the completion of a line from Mobile and several of the other cities to the same point, may be considered as parts of a great national scheme, to which the attention of the whole country is to be more fully directed. We do not intend to prejudge the matter, or intimate an opinion as to what point or locality is to be most benefitted, or has the highest claims to importance.

The editor of the *Cairo Delta*, speaking of this subject, says: "While we remark, that so far as Cairo is concerned, it matters very little whether this great and important railroad terminates three miles below it, on the Kentucky shore, or twenty miles, as in either case there must be a line of boats to this point—yet, we cannot consider it *altogether* settled that the Mobile and Ohio railroad will terminate at Columbus. We saw the written report of the Chief Assistant Engineer before it was published, and in that, while he states the landing of Columbus is superior to any other from height, etc., on the Mississippi, for the purpose, yet he says that two and a half or three miles below the mouth of the Ohio, a depot could be erected at comparatively small expense, and that as it would be in sight of Cairo, stock would perhaps be more readily taken in the Eastern cities. This last fact is of more real importance to the road, than any consideration that could be offered for making any other point the terminus, inasmuch, as to *get the stock taken* is always the first and the grand object.

We understand the citizens of Paducah, Ky., are making efforts to secure at that place the termination of the road, and urge as one argument, that the number of steamboats per year, passing Paducah, is far greater than the number passing Columbus.—We have obtained through the kindness of Mr. T. J. Smith, the following data, as taken from his wharf boat register, in relation to the number of steamboats passing the above mentioned places, during the year ending this month. Paducah, it will be recollected, is on the Ohio river.

From Ohio River to St. Louis	1728
" " " New Orleans	1740
From St. Louis to "	1058
	4526

Of these, 3468 passed Paducah, and 2798 passed Columbus. Thus during the year ending March 1, 1849, six hundred and seventy boats passed the former place more than passed the latter.

Now it will be remembered that *all* these steamers *passed Cairo*—therefore, so far as this consideration operates, the road should be made to terminate as

near Cairo as possible. As declared in Mr. Troost's report, this nearest point is about three miles below the mouth of the Ohio—and the best point, so far as regards high land, is at Columbus, nineteen miles below Cairo. But, as we have said, the point of the termination of this road will matter very little with Cairo, so it be not located further down the Mississippi than Columbus.

The writer of the above mentioned letter appears very sanguine as to the ultimate greatness of Columbus. We hope that his expectations may be gratified, and believe that in some measure they will, from the desirable situation of that place. Yet Columbus ought not to be confounded with 'the mouth of the Ohio,' as the writer of the letter appears disposed that it should be, neither should he declare, as in substance he did, in a portion of his letter, that a city can never be built at this point, for that idea has been laughed at by every engineer who has visited Cairo within the last few years. It can only have influence with those utterly unacquainted with this point—'one of the most remarkable points, says Judge Breese, in his report to Congress, 'on the globe, at the confluence of the Ohio with the mighty Mississippi, a spot to which all the great rivers of the west converge as to a centre, and were most of the commerce bound on their bosoms, must pass on its way to the ocean, or from State to State, whether from the Missouri or upper Mississippi, the Wabash or the Ohio, the Cumberland or the Tennessee.'"

Quebec and Halifax Railway.

The final report of Major Robinson, royal engineer, on the proposed trunk line of railway from Nova Scotia through New Brunswick to Quebec has been made, from which it appears that five routes were examined and surveyed, the first being 600 miles in length, the second 435, the third 652, the fourth 595, and the fifth 602 miles in length. The second line is the one recommended, commencing at Halifax, and running to Truro, at the head of the Bay of Fundy, thence over the Cumberland Mountains to Amhurst, then along the coast from Bay Verte to Shediac, thence by a northwesterly course, crossing the rivers Richibucto and Miramichi, so as not interfere with the navigation; then by the Valley to Bathurst on the Bay of Chaleurs, along the coast of this bay to the Restigouche River, and by it and the valley of the river Metapedia to the St. Lawrence, and by the right bank of the St. Lawrence to Quebec. This line passes through extensive coal fields and mineral districts, in which iron ore is abundant. One most important object is to be attained by the construction of the railroad is the settlement of the public lands, and the encouragement of emigration from the mother country. It is stated to combine in the highest degree the greatest amount of remuneration for the expenditure to be incurred as compared with the other routes, the opening up a large field for provincial improvements for the settlement of emigrants, and by affording the opportunity, in addition to internal, of external communication by means of the Gulf of St. Lawrence and the Bay Chaleurs, that it will tend to develope in the highest degree the commerce and the fisheries of the provinces of New Brunswick. After explaining the advantages of this route as to climate, agriculture and engineering, it states the estimated cost to be about £700 per mile, which, for the 635 miles, would amount to £4,445,000, and adding one-tenth for contingencies, to £444,5000, total £4,889,500, or in round number, $5,000,000. It is estimated that the whole population at present which will be benefitted by and become contributors to the line may be taken at 400,000, and would, at 10s. per head, give £200,000 as the profitable revenue per annum. Various suggestions have been made for raising the capital required for the construction of the line by Earl Grey, the Secretary of State, and the governors of the provinces; but nothing definite has yet been come to with regard to the mode of raising the capital. They admit the advantages of the railway, and the governors of the provinces their willingness to contribute towards its construction.

We have received a series of documents accompanying a report on this line, drawn up by G. R. Young, Esq., Commissioner of the Province of Nova Scotia, which contains a mass of information on this subject, and from which we shall give extracts in our next paper.—*European Times.*

We cannot make use of any comments so interesting as the following remarks from the London Colonist:

The Quebec and Halifax railway appears to be the forlorn hope of the Imperial Government. We quote from the Report of Major Robinson, on behalf of the Royal Commissioners. The report is dated at Halifax, August 31st, 1848. Major Robinson says:

"It (the Quebec and Halifax railway,) is the *one* great means by which alone the power of the mother country can be brought to bear on this side of the Atlantic, and restore the balance of power now, fast turning to the side of the United States.

Every new line of railway made in that country adds to their power, enabling them to concentrate their forces almost whenever they please, and by the lines, of which there are already some, and there will soon be more, reaching to their northern frontier, they can choose at their own time any one point of attack, on the long extended Canadian frontier, and direct their whole strength against it.

"In a political and military point of view, the proposed railway must be regarded as becoming a *work of necessity.*

The increasing population and wealth of the United States, and the diffusion of railways over her territories, especially in the direction of the Canadian frontier, renders it absolutely necessary to counterbalance, by some corresponding means, their otherwise preponderating power.

Their railway communications will enable them to select their own time and their own points of attack. and will impose upon the British the necessity of being prepared at all points to meet them.

It is most essential, therefore, that the mother country should be able to keep up her communications with the Canadas at all times and all seasons. However powerful England may be at sea, no navy could save Canada from a land force.

Its conquest and annexation are freely spoken of in the United States, even on the doors of Congress.

Weakness invites aggression, and as the railway would be a lever of power by which Great Britain could bring her strength to bear in the contest, it is not improbable that its construction would be the means of preventing a war at some no distant period.

And if, for great political objects it ever becomes necessary or advisable to unite all the British Province under one Legislative Government, then there will be formed on this side of the Atlantic one powerful British State, which, supported by the Imperial power of the mother country, may bid defiance to all the United States of America.

The means to the end, the first great step to its accomplishment, is the construction of the Halifax and Quebec railway."

In the Despatch of Earl Grey, transmitting this Report, the same degree of emphasis is observed in recommending the undertaking, as one of very great necessity. Here then is the Imperial Government moving in the matter of a great military work, a railway 600 miles in length, to run through a wilderness, for the ostensible object of making the North American Provinces a field for military operations against the United States, at some future day. Now had it been designed to draw the necessary funds for its construction from the Imperial Treasury, the work might have appeared practicable though even then its availableness for the purpose intended might with great truth be questioned. But it is clear that Earl Grey is miscalculatating his means, and is building up his hopes in utter disregard of the facts which the commercial tendencies of the times are setting forth.—The construction of the Quebec and Halifax railway, a great military work, ill comports with retrenchment in the army and navy and coast defences. The idea of war between Canada and the United States does not harmonize with the new commercial system which promises peace through commerce. And no greater mistake could be committed than to suppose that the free traders of Canada who have had free trade forced on them, and who are now reconciled to it, can have any other intention than to cultivate friendship with the people of a neighboring and prosperous and powerful Republic; and in the spirit and according to the doctrines of free trade. to break down all commercial barriers, and belligerent barriers also. Had this scheme been proposed under a system of protection to Colonial produce in the British market, the appeal would then have been made to our interests; but a free trader, whose motto is peace, whose means of obtaining that peace is commerce, and who must be naturally interested in making commercial and friendly alliances with that nation which from position and fraternity, language and institutions offers the most ample facilities for the accomplishment of his desire, is not likely to regard a military work with any other feeling than that of repugnance. In this province the commercial and frontier interests all favor free trade, and they will naturally ask why they should be called upon to aid in the construction of a military work in which they have no interest, but which they engender a thousand causes of apprehension, and may ask, besides why they should be expected to place themselves in the event of war, between two fires.—*Colonist.*

The more recent despatch of Earl Grey to Lord Elgin, under date of January 24, 1849, published in our paper of the 24th ult., as then stated by us must be regarded as dashing the whole scheme in the face. The last hope of the lower Provinces is finally taken away at the very time, when of all others, they most need the protection and the jointing aid of the Home Government.

High-Pressure Steam Ventilation.

On Wednesday last, about 40 Members of Parliament attended at the Polytechnic Institution, agreeable to an appointment made by some influential Members of the late and present Government, to inquire into the principle of application of Mr. Gurney's system for the ventilation of coal mines by high-pressure steam. The Polytechnic Institution was selected on account of the hydro-electric steam apperatus, from which high-pressure steam might be obtained for experiment, and was closed to the public for that purpose.

Dr. Bachhoffner demonstrated the principle of producing currents of air by the steam-jet, in a series of very interesting experiments, beautifully illustrative of the maxim, "that the toys of boyhood are the tools of men," beginning with some simple experiments demonstrating the principle of the action of high-pressure steam in ventilation, and ending with one showing the absolute power of this stupendous agent to the clearing of the largest coal mine in England in five minutes. Dr. Bachhoffner said, notwithstanding he had had his attention called to the subject for some time, yet so great was the difficulty of understanding the action of high-pressure steam, as a motive power for ventilation, that he might be said to have but a glimmering into its *rationale*; and as Mr. Gurney was present, he would beg him more clearly to explain it, in connection with the subject before them.

A long and very interesting discussion now took place. In the course of conversation, and answers to questions, Mr. Gurney detailed a vast deal of interesting information connected with the history and application of high-pressure ventilation. His first experiments were made when a schoolboy, spending his Christmas holidays with the late Mr. Davies Gilbert, in 1810, where he became acquainted with Trevithick, the inventor of the high-pressure steam-engine; this acquaintance led to his (Mr Gurney's) experiments on locomotion, and ultimate application of high-pressure steam to procure a draft up the chimney of steam-carriages on common roads, in 1826.

It will be in the recollection of some of our readers that this carriage propelled itself from London to Bath, and returned over the turn-pike, from Bath to London, the next day, making the journey in 12 hours. Turnpike trusts, foolishly interfered, the experiments were stopped, and railways were the consequence.

Mr. Gurney said: its application to locomotive engines on railways followed; and it was to this draft, and to this alone, the life and soul of the engine was due. Without this application of the

principle now used in coal mines, railways never would have been made; the same principles, however, when carried into coal mine ventilation, required modification to meet the conditions of the mine. The modification essential to success was pointed out in the *Report of the South Shields Committee*, published in 1843. Mr. Forster, the extensive and scientific viewer, of Newcastle, whose letter was published, had referred to that report, after seeing some experiments in the Polytechnic Institution, and had succeeded in his application.

Mr. Gurney demonstrated, by a single experiment, that a current of air, by high-pressure steam, might be kept up at any rate, or for any length of time, as a constant quantity, or might be increased or diminished at pleasure. To the apparatus which he used in the experiment, he attached a mercurial gauge, and showed by the height of the column the force produced, and the degree of current indicated. Extraordinary as it may appear to those unacquainted with the fact, the mercury rose when the full current was on to 49 in.! Now, it may be well for us here o observe, that a current of air, moving at the rate of 80 miles per hour, only gives a pressure equal to half an inch of mercury; 70 miles per hour is a violent storm; 80 miles per hour is the rate of a hurricane, only known in the West Indies. Here was a power of current equal to 19 in., or 38 times that rate of current! When the pressure of the current was applied to water, it rose a column instantly, which, he stated, if there had been height in the room, would raise to 20 ft.! He (Mr. Gurney) observed, this was an experiment only to show the extreme range of power; it might be regulated to any given quantity—down to almost an insensible current, and there fixed at pleasure. He fixed it at a ¼ in. of mercurial gauge; then to ½ in., and gradually to every degree on a graduated scale. It was adjusted, at a given degree, and kept steady to the points without variation—in short, to whatever degree the regulator was adjusted, to that degree, and that only, would the current extend. In answer to a question from Sir Robert Peel, as to the rate of current necessary to secure safety from fire-damp, and to protect health from carbonic acid and other impurities, Mr. Gurney said he thought a current of 12 ft. per second (about 9 miles per hour) would do for ordinary mines. Some required more ventilation than this, where fire-damp was prevalent, particularly in weather when the barometer was low; and in some mines, 6 to 8 ft. per second would be ample. This amount of ventilation (he said) must be kept up through every gallery. It often happened that a current of 12 miles per hour might be read off in the upcast shaft; when in the galleries the air did not move at a rate exceeding five; because the sum of the areas of the galleries exceeded the area of the upcast shaft in that proportion. In such case, the rate of current up the upcast shaft should be raised to 28 feet. per second; the observation applied to every working part.

In answer to a question from Mr. Cayley, Mr. Gurney said, three-fourths of the deaths from coal mine explosions arose from choke-damp; in the recent case at Barnsly, only one-third were killed by fire-damp, 48 were killed by after-damp; this latter was heavier than the atmosphere, and so difficult to remove, that in some cases, no one could go into the mine for days. High-pressure ventilation, in full power, would remove it in three minutes. To a question from a gentleman whom he did not know, respecting the choking up of the air courses in case of explosion, he (Mr. Gurney) observed, that in no such case was the gallery at the fall hermetically sealed; it was only partially stopped—in short, from whatever part of the roof might fall, it would leave an imperfect opening; in such case, the great value of the high-pressure ventilation was evident; for, if the fissures and imperfect opening left amounted in the gross to a few inches sectional area, a current of air through them might be induced so great, making up in the intensity what it lost in the area, to blow out the mine, certainly sufficient air to render the galleries breathable; he instanced, on this point, the height of mercury then standing in the gauge, and observed that the current the pressure indicated would through a small opening of two in., produce sufficient heat to smelt iron in the largest furnace. This immense blast was shown by Dr. Bachhoffner, and in a moment, at will, he reduced it to a current, moving only at the rate of 2 miles per hour, at which it was fixed.

In answer to a question by Sir James Graham, as to the expense of high-pressure ventilation, he observed it was the cheapest possible, and simple in its construction; that for 5*l*., if a boiler was on, or near the mine, the apparatus might be fitted. He had no interest whatever in the subject, it was open to the public; it was given in his evidence in 1835, and any one might use it that liked. In answer to a question from the Marquis of Landsdowne, Mr. Gurney observed, that a given arrangement was essential to success, and referred to the details in Mr. Mather's *Report of the South Shields Committee*.

Sir Charles Lemon inquired, whether it was necessary that the apparatus should be in the upper-shaft?—Mr. Gurney observed, that a horizontal gallery on the surface of the earth, connected with the shaft, would act equally well, and as there was no obstruction in the working of cages and buckets up and down the shaft in which the steam was used, the horizontal gallery was an expense that might be saved.

In answer to a question from Mr. Hume, Mr. Gurney said, instead of dying in five minutes, as the passengers did in the steamboat going to Ireland, or in five hours, as the soldiers did in the black hole of Calcutta, the colliers were 30 years about it; there was no question that the impure air and want of proper ventilation, fearfully affected their health; he remarked at the late colliery explosion at Barnsley, there were but 4 out of 75 men killed over 40 years of age.

Lord Ashley, we belive, asked whether this system would reduce the number of accidents?—Mr. Gurney said, with a true and proper ventilation the worst mine might be worked with safety. That among the number of persons employed about a mine, and the difficulty of warning them, it would be to much to say an accident would not occur; but with fair management, and proper regulations, he did not see how fire-damp could ever collect to be explosive.

Sir Robert Peel asked if the safety-lamp need be used?—Mr. Gurney said, except in some cases of blind cuttings, he thought it need not be used.

A great many experiments were now repeated, at the request principally of Lord Landsdowne and Sir Robert Peel. After about two hours the party separated.

Amongst the company present were Earl St Germans, Marquis of Lansdowne, Sir Robert Peel, Sir James Graham, Sir J. Walmsly, Right Hon. Sydney Herbert, Mr. Joseph Hume, M.P., Lord Ashley, Sir Charles Lemon, Mr. Edward Cayley, M.P., Mr. J. Pendarves, M.P., Admiral Bowles, Admiral Hope, Mr. J. Brotherton, M.P., Mr. C. Forster, M.P., and a number of other gentlemen connected with the Legislature, the Government, and the members af the Institution.—*Lond. Min. Jour.*

Railroads in Illinois.

ERROR CORRECTED.

We observe in the American Railroad Journal of the 17th ult., an article copied from the Cincinnati Gazette, on the subject of the proposed railroad from that city to St. Louis, which demands a passing notice. This publication, besides its wanton aspersions upon this place, does great injustice to Illinois. The writer may not have intended it. The zeal felt by him, in common with the city of his residence, for a railroad to the Mississippi, may have so entirely possessed him, that the merits of other routes for the same road may not have received due consideration. He evidently forgets, that there are "two sides to this case." We will notice what he says, in the order in which he presents it.

We have, it is true, applied to Congress for a grant of lands to assist in the completion of certain roads in the state, long since projected. We consider, on the score of sheer justice alone, Illinois is entitled to an additional grant of lands for such purpose; because what she has already received falls far short of the donations made to her sisters, Ohio and Indiana, for the same object. Equal justice then requires the additional grants, now applied for, should be made; but if they should not be, our cause of complaint would be small in comparison with what it would be, if deprived of the right of so locating and terminating our roads in our own state as shall best promote its interests, without injury to our neighbors—as also without the loss of the large amount already expended towards the structure of roads which we have already commenced. We claim, as we have already said, this grant as matter of right and justice. We also show to Congress the propriety of making it, under existing circumstances, from motives of high public consideration, and of interest to the Government in effecting a speedier sale to its remaining lands.

As to the location of the Cumberland road.—We are sorry to see the Editor of the Gazette so soon forget that Illinois, in what she has done in this matter, has followed only the example of her sister, Indiana. Did not that state resolve that this road should pass out of the state at Terre Haute and not elsewhere? and were the appropriations withheld on that account? and this too, when another route through that state had been surveyed and determined on. Illinois has not acted in this particular so presumtuously as did her sister. She has only resolved that this road should cross the Mississippi where it was first surveyed; where the route was best and shortest to the river; and where the act of Congress required. Why then make fish of one state and flesh of the other? If this course was right in the state of Indiana, why was it wrong if Illinois? Our respected neighbor threw the first "fire brand," if any has been thrown—not Illinois.

The withholding of appropriations for the road surely cannot be ascribed to this cause; for the road has never been half completed, even so far as it has been located. We are sorry to see the writer forget that this road was to be made out of a certain fund—a certain portion of the proceeds of the sales of the public lands, which have been exhausted and exceeded a hundred fold before the appropriations were stopped being made. Has he so soon forgot that those "who arrayed themselves systematically against all appropriations for Internal Improvements," gained the ascendency in the National Legislature under the administration of Presidents, who held doctrines much more stringent on this subject than before prevailed? Does he not remember, moreover, that these more stringent doctrines became very predominant at the time when the Cumberland road fated so badly? A new spirit was abroad in the land, and influenced the public councils in this particular. The resolution of Indiana and Illinois never contributed a feather's weight to prevent the appropriations. The right of both states to control in this matter was fully recognized; and had it not been for the factious spirit of St. Louis, awakened then, as it is now, no question would have been made—no trouble created. But if the progress of that road was stopped for any such cause as the writer mentions, it was the fault of St. Louis, in resisting the exercise of an unquestioned right of this state. *She* then is the party in fault, and not Illinois "at the prompting of a few lot holders at Alton."

This writer, who, for aught we know, may hail from St. Louis, affects to think it very mean and contemptible in Illinois fo refuse the boon which has been proffered by those cities. She is wanting in courtesy to her neighbors, in refusing the facilities asked, for executing their beneficial purpose?" The "taking a meal at Alton, and paying a tax in the shape of porterage, to its citizens, is a small business—a very small business for a sovereign state," says this political economist. Yet, small as this business is, if it be all that is involved, it is doubtless as much for Alton as it is for Vincennes, or St. Louis, or Cincinnati; unless it be conceded, as it seems to be contended, that they shall be permitted to swallow all, because they are a great deal larger.

We trust that the intelligent Editors of the Railroad Journal and the Commercial Gazette, whose object should be, and doubtless is, to communicate valuable information to their readers, on the important subject in question, will look at it, not as it is presented in the St. Louis prints, but in its true and proper light, as set forth in the reports submitted to our last Legislature, and in the discussions which took place in that body towards the close of the session. This will enable them to become acquainted with all the facts bearing upon the case at issue, and to correct the errors into which they may have been led by unsupported assertions, and *ex parte* statements.—*Alton Telegraph.*

The able and intelligent Editor of the Telegraph may be assued that we had no intention of doing in-

justice to Illinois, or casting any aspersions upon the good people of Alton, by copying the article referred to from the Cincinnati Gazette.

We have read with great interest the able editorial articles and communications in the Telegraph on the Railroads of Illinois. It must be admitted that Alton has made her influence strongly felt in the councils of that State, and we may be unable, from our position, to enter fully into all the reasonings which induced the Legislature of Illinois to withhold their assent to the charter for the Cincinnati and St. Louis railroad.

We care nothing personally for Alton, or St. Louis, or any locality, except as the arrangements and confirmations of nature direct attention to them as favorable points for business. The natural laws of trade must in the end prevail, whatever temporary advantages the energy, the industry, and foresight of the men of particular localities may achieve.

Suppose the legislation upon this question was under the control of the national government instead of the State of Illinois, would not the charter of the Mississippi and Ohio railroad be readily granted? We beg our friend of the Alton Telegraph to answer this inquiry in the same frankness as we put it.

Would it not be better for the whole country that the public lands within the several States, or the proceeds when sold, should be appropriated to the construction of railroads within their respective limits? This is a question deeply affecting Illinois, and she should take a comprehensive view of the railway policy which is yet to grow up into a general system for the whole country. The legislation of the Union may possibly come in aid of State enterprise with the unanimous consent of all the States in the confederacy.

Notwithstanding the action of the Illinois Legislature, the friends of the Cincinnati and St. Louis railway seem equally alive as formerly to the undertaking. The citizens of the former city have agreed to subscribe $1,000,000 to the stock, and the city of St. Louis has also agreed to take the sum of $500,000. Our western exchanges are largely filled with discussions upon the matter.

Improvements in the Make of Iron.

The astonishing increase in the produce of the furnaces in the bituminous districts takes its origin from the application of steam and engine power to the production of a continuous stream or pillar of blast, instead of the puffing of the old fashioned wind bellows; and further, to the discovery of my highly valued friend, Anthony Hill, Esq., of the Plymouth Works, Merthyr Tydvil. It is to the science, energy, and research of this gentleman, that the iron trade is indebted for the practical discovery that the cinders produced in the various stages of converting, in our forges, crude, or cast iron, into wrought or malleable iron, were capable of being re-smelted and re-converted in the blast furnace, and the iron they contained, amounting to 50, 60 and 70 per cent., profitably extracted from them. These cinders were formerly thrown away as refuse, or used only for the repair of our roads and thoroughfares—they are now eagrely sought after, and purchased at values as high as some of our richest iron ores. To Mr. Hill a debt of public gratitude, and something more, is due, which I should rejoice to see properly acknowledged and paid. Mr. Yates, of Rotherham, Yorkshire, has, at his works, at Wingerworth, near Chesterfield, erected blast furnaces of an entirely different construction from those in use in this district, and the plan of which he has patented. They are about twenty feet in height, of a peculiar shape, and are blown with a soft fan blast. When I visited them, a few months ago, they were working admirably, and producing excellent pig iron, at the rate of 120 tons and upwards in a week, at each furnace. These furnaces, and their blowing apparatus and appendages, appeared to me so simple and inexpensive of construction, in comparison with the huge piles of masonry and ponderous machinery of our blast furnaces and engines in Wales, that I imagined they would create a perfect revolution in the iron trade. In the anthracite districts of our mineral basin, the improvements effected by the late Mr. Crane, and the application by him of hot blast to the smelting of iron with anthracite coal, were acknowledged, certainly not more gratefully than they deserved to be, by those who are interested in the mineral productions of the anthracite districts, wherein the deposit of iron stone or ore is enormous, but its reduction with its accompanying fuel almost new. The recent improvements of Mr. J. Palmer Budd, adopted at his extensive works near Neath, and patented by him, are worthy of the greatest attention. Mr. Budd, who read an admirable paper, explanatory of his improvements, to the chemical section of the meeting at which my address was delivered, and with the kindest liberality, invited the members of his association to visit and inspect his works, has succeeded in economising the use and consumption of an expensive and valuable fuel, and in preserving from positive waste, and applying to profitable use, volumes of heat evolved in the process of smelting, heretofore allowed to escape.—*C, E. and A. Jour.*

Artificial Light.

Professor Brande delivered a lecture at the Royal Institution, "On the Theory and Practice of the Production of Light." Mr. Brande commenced by referring to mould candles and single-wicked oil-lamps used in houses and streets at the beginning of the present century; and remarked that the vast improvement made in artificial illumination might be taken as a striking instance of the great influence of applied science on the comforts of life. He then proceeded to give a statement of the scientific causes of this improvement. In common flames the evolution of light results from two independent causes —*ignition* and *combustion*. *Ignition* is probably a mere transient physical state of matter, producing no change in the ignited substance. *Combustion* is essentially a chemical phenomenon,—the heat and light produced are the effect of successive chemical actions, and the substance is permanently changed. *Combustion*, then, may be regarded as the origen of the heat—*ignition* of the light afforded by flame.—Mr. Brande demonstrated, by many experiments, that the luminosity of flame is due to solid matter existing in the combustible gas; and he noticed the expansive effect of heat in throwing down charcoal in the combustion of olefiant gas. The conditions of the fitness of bodies for purposes of common illumination were stated to be, that the matter from which the luminosity is to be obtained should be combustible; and that the product of its combustion should be *gaseous, inodorous* and *harmless*. The products of the combustion of oil, wax, tallow and gas were contrasted with those of phosphoros, arsenic, &c.—which, but for the corrosive and poisonous matters resulting from their combustion, might be used as sources of light. It was also noticed, that though carbonic acid gas (which is one of the products of the combustion of coal gas, &c.,) br in itself noxious, it becomes harmless when diffused through the atmosphere. The importance of an accurate adjustment of the solid matter of the combustible to the oxygen required for its combustion was next dwelt upon. It was shown by experiments with Leslie's burners that when too much air is admitted to a flame light is lost, and that in an insufficient supply of air the flame emits smoke, owing to the imperfect combustion of its carbon. The light of flame must be as nearly white as possible. This was proved by the obliteration of color when viewed by a monochromatic flame. The artificial light may imitate that of the sun in purity was shown by the obtaining a Talbotype in less than a minute by the light of phosphorus burnt in oxygen. A brilliant light was exhibited, produced by a kind of petroleum. From 130 to 150 gallons of this substance are daily collected at Ridding, Derbyshire. By distillation it yields 5 per cent. of naptha, 5 per cent. of paraffine (mineral tallow,) and 80 per cent. of mineral oil. This oil is worth above 4s. a gallon; and when burnt in a common afrand lamp gives the light of seven candles at the cost of three-eighths of a penny per hour. In conclusion, Mr. Brande noticed the electric light. He mentioned that the notion of electricity, as a source of illumination, had been suggested by Davy nearly half a century ago, with whom it was a favorite idea. Mr. Brande stated that a mode of procuring cheap electricity must precede the economical use of such illumination; and that were this obtained, water might be decomposed, and its hydrogen napthalised and then burnt, so as to produce a vivid, bright and steady flame in its other element—oxygen.—*Civ. Eng. and Arc. J.*

Lockport and Niagara Falls Railway.

We are indebted to Charles B. Stuart, Esq., Chief Engieeer of the State, for his very attractive Report of a Survey for the *Lockport and Niagara Falls* Railroad. The line follows the general course of the Erie canal, passing through the villages of Middleport, Medina, Albion, Holley and Brockport, a distance of about 55 miles, making the distance from Rochester to Niagara Falls 76 miles.

The field labor has been performed by Ira Spaulding, Esq., Engineer of Location, and he states the maximum grade at 19·80 feet per mile, 45·506 miles of straight line, and the curvatures of the remaining 8·785 miles as free from objection.

The cost of the road is estimated at $773,761, or $13,959 per mile. The Report of Mr. Stuart says:

The distance from Rochester to the Niagara Suspension Bridge, by your road, when extended and improved, will be only 73 miles. The distance between the same points, by the present lines of railroad, is nearly 99 miles—or 26 miles greater distance; besides having some 300 feet more elevation to overcome, on maximum grades of over 40 feet per mile.

If it should be thought that the length of the route from Rochester to Buffalo, via the Falls, would be an objection, when compared with the line via Attica, it should be remembered that the difference of 22 miles is in a great degree compensated by the longer tangent lines, easy curves and light grades of the Niagara route, and especially will this be the result when the present roads from Lockport to Buffalo shall have been re-laid with heavy iron rails, and improved in their construction, as is now contemplated. In addition to this, there will always be the great attractions of the Falls of Niagara, the Suspension Bridge, the Whirlpool, and the double tiers of combined locks at Lockport, to draw travellers over this route, when it is known that all these wonders of nature and art can be seen from the line of your road, and that, too, without the loss of a single hour, if the saving of time is deemed important.

Sources of Business.—It has already been shown that the termini of your road, east and west, are converging points, where the population of New England and New York, moving west, and that of the northwestern States and Canada West, moving east, will be drawn upon its track. In addition to this there is the yearly pleasure travel to the Falls of Niagara, now numbering over 60,000, halt of which number passed over the western end of your road the past year. There is, at least, 300,000 travellers passing between Rochester and Buffalo yearly, on the Erie canal, and by the railroad cars and Lake Ontario steamboats. The arrivals and departures at Buffalo, as stated by Mr. Barton, in his report in 1846, numbered 260,000 persons, which number must have greatly increased since that period.—There is also the way travel and traffic on your line to be added to that already alluded to—for which it is not easy to find data to arrive at any very satisfactory conclusion. But as your line passes through a very rich and populous country, and touches 18 flourishing villages and in the vicinity of half as many more, and terminates in a manufacturing city numbering over 30,000 inhabitants, which is rapidly increasing, it must form a very important item, equal probably to the ratio of any railroad in this State.

Probable Income.—It has been shown that your road, when completed, will depend for its support—

1st. On the way traffic of the line.

2d. On the pleasure travel to the Falls of Niagara either in going or returning.

3d. On the Canada travel, and that passing thro' Canada to and from the Western States and Territories.

4th. On a fair diversion of the Buffalo travel and traffic.

5th. On the transportation of produce and merchandise, to and from Canada.

6th. On the carrying of the U. S. mail.

To estimate the amount and value of the travel and traffic from all these sources, with any very great degree of accuracy, is of course impossible; but we may, I think, fairly assume that the aggregate travel, exclusive of that which will be brought to your road upon the completion of the Great Western railway, will be equal in number to those last year passed over the Attica and Buffalo railroad, which was 127,004 through passengers, and 19,231 way passengers. But I shall, for the purpose of greater caution, estimate for the pleasure travel to and from the Falls of Niagara, only 40,000, a number equal only to those carried over your road last year, which, at $2 each, would be $80,000. For the Canada travel until the completion of the Gt. Western railway, say 20,000 do $2,000.....$40,000

For the diversion of the Buffalo travel say one-fourth of last years number—31,750 do $2.....	63,500
For way travel, say half the way travel of the Auburn and Rochester railroad last year—54,233, do $1.....	54,238
For the freight traffic, say half the amount received for freight last year on the Auburn and Rochester railroad, which would be.....	41,568
For U. S. mail.....	10,000
Total receipts.....	289,306
Deduct one-third of receipts for expenses...	96,435
Net income.....	$112,871

or 12 per cent. on the cost of the work.

It seems to me clear, in view of the foregoing facts, and of the constantly increasing sources of travel and business between the east and the west, no apprehensions need be entertained, that the profits of your road when completed, will not be as large as the most extravagant could desire. With the greatest confidence, therefore, in the success of the enterprise in which you have embarked, I cannot but urge you to press forward its construction to an early completion.

Respectfully submitting these views, I am, gentlemen, your obedient servant,

CHARLES B. STUART, *Chief Eng.*

Rochester, February 1, 1849.

Statistics of British Commerce.

The returns of the Board of Trade, for the month and 12 months, ending Jan. 5th last, have just been issued, from which we find that the total exports of British produce for the 12 months have been 46,407,939*l.*; and the decrease, as compared with the previous year, 4,597,000*l.* For the month ending Jan. 5th last, there was exported—iron and steel to the value of 281,004*l.*—being a decrease, as compared with the month ending Jan 5, 1848, of 41,618*l.*; copper and brass, 124,561*l.*—being a decrease of 9769*l.*; tin, unwrought, 70,300*l.*—being a decrease of 7980.; lead, 0492*l.*—being an increase of 3161*l.*; and tin plates, 37,145*l.*—being an increase of 14,093*l.*; British salt was exported to the value of 26,062*l.*—being an increase on the corresponding month of 1848 of 15,291*l.*; glass, 19,754*l.*—being an increase of 975*l.*; hardware and cutlery, 189,447*l.*—being a decrease of 14,443*l.*; machinery, 29,805*l.*—being a decrease of 46,200*l.*; and coals and culm, 66,139*l.*—being a decrease of 4707*l.* The total of the above exports of mineral produce for the month amounted to 724,929*l.*, and shows an amount of decrease over increase of 86,597*l.*

The exports of foreign and colonial metals have been, for the years 1847 and 1848, as follows:—Copper, unwrought, 1847, 8043 cwts.; in 1817, 3726 cwts. Iron bars, 1847, 5053 tons; 1848, 3432 tons. Steel, unwrought, 1847. 13,357 cwts; 1848, 9779 cwts. Lead, pig and sheet, 1847, 3462 tons; 1848, 3748 tons. Spelter, 1847, 3346 tons; 1848, 3777 tons Tin, bars, ingots, blocks, and slabs, 1847, 11,471 cwts.; 1848, 8341 cwts.

The imports of metals from foreign parts and our colonies, for the years 1847 and 1848, were as follows:—Copper ores under 8 and 9 Vic., c. 90, 1847. 41,491 tons; 1847, 14,167 tons. Under 11 and 12 Vic., c. 127, 1847,——; 1848, 35,981 tons, making a total quantity of copper ores imported in 1848, of 50,148 tons. Copper, unwrought, 1847, 10,265 tons; 1848, 10,255 tons. Iron, in bars, 1847, 33,317 tons; 1848, 23,496 tons. Steel, unwrought, 1847, 13,097 cwts.; 1848, 6755 cwts. Lead, pig and sheet, 1847, 3932 tons; 1848, 3507 tons. Spelter, 1847, 12,769 tons; 1848, 13, 423 tons. Tin, blocks, ingots, bars, or slabs, 1847, 23,307 cwts; 1848, 6733 cwts. The exports of British and Irish metals, for the years 1847 and 1848, in declared value, were—Iron and steel, 1847, 1,541,868*l.*; 1848, 1,272,675*l.* Lead, 1847 170, 344*l.*; 1848, 117,181*l.* Tin, unwrought, 1847, 159,465*l.*; 1848, 143,436*l.* Tin plates, 1847, 462,889*l.*; 1848, 530, 061*l.* Machinery, 1847, 1,263,016*l.*; 1848, 809,564*l.* Hardware and cutlery, 1847, 2,341,981*l.*; 1848, 1,858, 593*l.* Coal and culm, 1847, 868,502*l.*; 1848, 1,096,356*l.* Glass, 1847, 291,180*l.*; 1848, 236,518*l.* And salt, 1847, 261,467*l.*; 1848, 265,296*l.*—*Lond. Min. Jour.*

English Patents.

Specification of a Patent granted to Thomas, Earl of Dondonald, Vice-Admiral in Her Majesty's Navy, for Improvements in Marine Steam-Boilers, and Apparatus connected therewith.—[Granted, February 11, 1848.

The principal features of this invention are the application to marine-boilers of the principle adopted for consuming the smoke in other boiler-furnaces, by admitting a steam of hot air behind the bridge, to burn the gaseous products, and the removal of the steam-chest from the top of the boiler to the end of it, thereby lessening the height. His lordship claims seven separate parts, which may be thus briefly noticed:—Firstly, the more perfect combustion of the gaseous products at their entrance into a tube-chamber, constructed according to a former patent, granted to him, by combining a steam of undecomposed hot air with such products. Secondly, the constructing boilers with the steam-reservoir placed below the level of the water in the boiler in lieu of the steam-chest as usually constructed above the boiler. Thirdly, the dying of the steam by its being exposed to a portion of the fire-place, or by passing the flue or chimney through it. He claims, Fourthly, a mode of preventing the priming of steam-boilers by means of a plate or separator placed within the boiler, the end being below the surface of the water in the boiler. Fifthly, the right of making and using a spiral or centrifugal separator: which, however, may be made square or other shape, and still retain the principle of the invention—namely, the separation of the water from the steam, and the mode of carrying off such separated water back to the boiler, without being obstructed by a contrary current of steam, by means of a pipe or channel from such spiral separator to the boiler. Sixthly, he claims a mode of working the propellers of steam-vessels by means of short propeller-shafts. And, Lastly, a mode of constructing boat boilers and apparatus.—[Inrolled, August 11, 1848.

Specification of a patent granted to William Russel, of Lyndbrook, Gloucestershire, for an Improvement in the Preparation of such Bar-Iron as is used in the manufacture of certain kinds of Rod-Iron.—[Granted January 29, 1848.

This invention may be very briefly described. The object is to remove from the surface of the ordinary bar iron the spill or scale, which is found to be very injurious in making the billets from which wire-rod-iron and horse-shoe-nail rod-iron is manufactured. The scale is removed by passing the bar-iron through a kind of draw-plate, called a "cleanser," composed of grooves formed in the shape of the letter V. In conducting the operation, the iron is first made into lumps of about one hundred weight and a quarter. It is then removed to the hammer, where it is reduced by hammering to short bars of five or six inches square. It is next passed through the rolls in the usual manner, and reduced to bars of about one inch and a quarter square. In passing through the two last and finishing grooves in the rolls, opposite which the cleanser is placed, the lower half is slightly lowered in order to admit of the entrance of the bar to the rolls which draw the bar through. During this finishing operation, pressure is exerted to bring up the cleanser by means of the leaver and shaft, thereby scraping the iron on all its four sides, and effectually removing all the spill and scale from the surface. The bar is then passed over the upper roll, and is introduced through a smaller groove in the rolls, when the operation of scraping is repeated as before.—[Inrolled July 29, 1848.—*Ibid.*

Native Copper in America.

At a recent meeting of the Academy of Science at Paris, M. Cordier exhibited a mass of native copper, from the banks of Lake Superior, in the United States of America, and communicated on the subject the following particulars:—Some time since, beds of native copper, of considerable extent, were discovered on the eastern banks of Lake Superior; more than 120 companies are at present occupied in working these valuable beds, which are extremely remarkable in many respects. The copper is always found in its native state, and is disseminated in pieces of various size and irregular form, through a vast extent of pyroxenic porphyry, passing to the state of brown wacke, often amygdaloid, and which completely resembles the pyrogenous rocks in the neighborhood of Oberstein in the Palatinate. The metallic particles are sometimes found as forming part of the rock, and at other times they occupy irregular veins, formed of white and spathos carbonate of lime.

A specimen exhibited to the academy by M. Cordier, weighed upwards of 112 lbs., and contained very little gangue. This specimen, as well as another more than ten times its weight, formed part of a cargo of several tons which recently arrived at Havre; it is intended to be placed in the Museum of Natural History. The copper is of extraordinary tenacity and purity, containing scarcely ten parts in a thousand of sulphur and silver. At one of the extremities of the copper district, where this metal somewhat less abundant, it is replaced by native silver, disseminated in some parts throughout the rock, and also in the copper, in particles extremely fine, generally not readily to be perceived, and rarely attaining the size of a sentime (0-393.) The association of these two metals in a native state, is a circumstance entirely new. From the information communicated to M. Cordier, a copper is obtained by smelting, often containg 20 per cent. of silver. M. Cordier has seen an ingot sent for assay, which was found to contain more than 30 per cent of silver. If, as it would appear probable, these discoveries should lead to extreme working, the United States of America, which already possess rich mines of iron and anthracite in the old territory of the Union, and who will derive advantage from the working of the lead mines of the Upper Mississippi, and of the almost incredible "diggings" in California, will be placed at the head of those nations which Nature has most favored in the distribution of subteranean wealth.

The Effect of Steam on Timber.

Mr. Violitter has lately presented to the Academy of Science in Paris, a very able communication on the dessication of different kinds of wood by steam. He stated that steam raised to 482° Fah. was capable of taking up a considerable quantity of water, and acting upon this knowledge he submit ed different kinds of oak, elm, pine and walnut, about 8 inches long and half an inch square to a current of steam at 7½ pounds pressure to the square inch, but which was afterwards raised to 482 degrees. The wood was exposed thus for two hours. It was weighed before it was exposed to the steam and afterwards put into close stopped bottles until cool, when the samples of wood were again weighed and showed a considerable loss of weight, the loss of which increased with the increase of the temperature of the steam. For elm and oak the decrease in weight was one half, and ash and walnut two fifths, and pine one third. The woods underwent a change of color as the heat was rising from 392 degrees to 482, the walnut became very dark, showing a kind of tar, formed in the wood by the process, which was found to have a preserving effect on the wood.

It was found that wood was thus treated became stronger—having an increase in the power of resisting fracture. The maximum heat for producing the best resisting fracture power for elm was between 302 and 347 degrees, and between 257 and 302 for oak, walnut and pine. The oak was increased in strength five ninths, walnut one half, two fifths for pine, and more than one fifth for elm. These are but preliminary experiment which may lead to very important results, and are therefore interesting to architects especially. By this process,

the fibres of the wood are drawn closer together, and maple and pine treated in the steam to a temperature of 482, were rendered far more valuable for musical instruments than by any other process heretofore known. This is valuable information to all musical instrument makers—who knows but this is a discovery of the Venitian fiddle maker's great secret.

AMERICAN RAILROAD JOURNAL.

Saturday, April 14, 1849.

Railroad Scales.

Freight on a railway is generally paid at a given rate per hundred or ton. The use of scales for ascertaining quantities is now universally adopted instead of the old mode of estimating or measuring by the foot. We have often been struck with admiration on witnessing the ease with which large loads of merchandise have been weighed on FAIRBANK's Patent Scales. On applying the severest tests and the closest scrunity their perfect accuracy has often been tested. After weighing a load, then dividing it into several parts and weighing these parts separately, the aggregate would be precisely the same in both instances. The labor of weighing a hundred tons is about as easily performed by the use of these scales as the weighing of a single pound. The perfection of these scales consists in their accuracy, and their convenient and compact form. For all parties or companies requiring the weighing of heavy bodies, they are found to be almost if not quite indispensible. By referring to our advertising head parties will see whom to address.

Railroad from Lewiston Falls to Rumford Falls, in Maine.

We have been favored with a copy of the Report of a Survey and Estimate for a Railroad from Lewiston Falls to Rumford Falls, Me., made by WILLIAM H. NOBLE, Esq., Engineer, accompanying which, is a finely executed map of the road. The Report does great credit to the ability and taste of the engineer, and presents in a very attractive form the arguments in favor of this line, following, as it does, the general direction of the valley of the Androscoggin.

The distance is 42 miles, and the engineer estimates the cost of the road at $12,861 per mile, estimating the superstructure at $5,254 per mile.

From some knowledge of the localities, we think the estimates for grading, etc, are not understated, The price of iron is put too low, and a lighter rail than 56 pounds to the yard will be required, to come within the estimate.

The people along the line of this route have the means within themselves to build the road, if they are united and in earnest. The spirit of Vermont, or of Massachusetts, is only wanting in Maine, to bring the splendid water power of the Androscoggin into rapid use. It is by far the most attractive river of New England, and has more advantages for manufacturing purposes than any one of its streams.—From Lake Umbagog to the sea, in a distance of about 150 miles, it has a fall of 1254 feet, presenting a succession of cascades more attractive to the pleasure tourist than can elsewhere be found in New England.

The Railway Bridge of the Lewiston and Waterville Railroad crosses at the head of Lewiston Falls, nearly one hundred feet above the foaming waters below, and at Rumford, the waters of the Androscoggin are precipitated more than 180 feet over the irregular granitic masses which break their fall.

In New England, at the present time, the question in regard to railways is not so much one, as to where on the whole can the best line be obtained; as who will consent to live away from the reach of their influence? The same spirit is extending itself throughout the whole country, and notwithstanding the stringency in money matters, railways are destined to go forward, with more strength, energy and vigor, than has yet been witnessed, with the single exception, perhaps, of the State of Massachusetts. Almost every town in that State is now within striking distance of a railway, and every good water power attracts to it a line of railway at once.

Locomotive Engines.

History of the Manufacture in the United States.

In our paper of February 24th, we gave some account of the Manufacture of Locomotive Engines in the United States, with a brief allusion to the several works engaged in their construction. We made careful inquiry into the history of the manufacture, but could find no satisfactory record, or testimony on the subject, except through a great variety of private sources. In this matter, as in all others of similar import, we desire to draw forth, from various engineers and other parties, now scattered throughout the country, all the information that can be gathered upon the subject.

The mechanical skill of the age is now more devoted to railway machinery than to any other branch of mechanics, not excepting even steam navigation. The Locomotive Engine is the most wonderful of created things. Everything touching its history or its progress, is now eagrely sought for by practical men, with the same earnestness as that awakened by a new discovery. We feel, therefore, more than ordinary gratification in being able to lay before our readers the following very interesting note addressed to us by JOHN HAMPSON, Esq., of Louisiana, Engineer of the New Orleans and Carrollton Railroad.

Carrollton, 23d March, 1849.

To the Editor of the Railroad Journal:

In your number of February 24, you give a short historical sketch of locomotion, which is not fully correct. The writer of this assisted in the construction of the first locomotive that was made in this country for a railroad company; and also in the putting together, and trial of those which first came from England. The following are the facts:

In 1829 the Delaware and Hudson railroad company imported two locomotives from England of the old form; one of them was erected and tried in the West Point company's shop, at the foot of Beach street, in your city, and the other was tried at Dunscombe's, near the East river. I did not see them on a railroad, but I heard that they did not succeed. In the latter part of 1829, or perhaps the beginning of 1830, a locomotive engine was made at the said West Point company's shop, for the Charleston and Hamburg railroad; this was employed in conveying materials for the construction of the road, and I believe was the first one made in America that performed successfully. About the end of the latter year, another one was made at the same establishment, for the same railroad. In the beginning of 1831, an engine was also made at the same place for the Albany and Schenectady railroad. The writer assisted in its construction and trial on the railroad. It was called the DeWitt Clinton, and was of small size, not weighing quite four tons; it would not take over three cars (small ones) from Albany up to Schenectady; however, *alone*, it attained a speed of near 40 miles an hour. Soon after this engine commenced running, which was about July, 1831, one of Stevenson's improved locomotives arrived on the road, from England. It had four wheels of the same size, and 10 inch cylinders 14 inch stroke. The contrast, between this engine and the American one, was great; the latter being a beautiful, light, race-horse looking machine, while the former looked heavy and "Elephantic" in comparison. It was immediately christened "John Bull." However it proved to be an excellent machine, and the writer has (in 1831) on the Mohawk and Hudson railroad, frequently driven it, with a train of cars behind it, 5 miles in 12 minutes. This I believe was the first English engine that run with regular passenger trains in this country; at least I am not aware of any one before it. By the way—this engine was subsequently altered, and I believe was the first locomotive under which a truck was placed, which was done in the railroad company's shop, under the direction of Mr. Asa Whitney, the company's superintendent. Yours, etc,

JOHN HAMPSON,
Engineer N. Orleans and Carrollton R. R.

Our hearty thanks are due to our attentive friend for the above information. We are thereby enabled to place on record, for future reference, facts which are of the greatest interest to all persons interested in railway improvements. We ask the same from other friends of the railway.

Contrast the best engines of this day with those of 1829 and 1830, and you see, by the comparison, something like a distinct record of the progress of the age.

Portland and Montreal Railroad.

The receipts of the Atlantic and St. Lawrence Railroad, for the first quarter of the present year, have been as follows:

	Passengers.	Freight.	Total.
January.....	$3,437 11	$1,931 98	$5,369 90
February.....	3,469 90	2,915 04	6,384 95
March.....	5,238 37	4,147 36	9,385 73
			$21,039 76

The business of March was upon a line of 42 miles, including 6 miles of the Lewiston and Waterville railroad. The Montreal road is to be opened to Paris, 47 miles from Portland, and the Lewiston road to Waterville, 82 miles from Portland, and 55 miles from the Danville Junction, at an early day the coming season. Both lines have favorable grades, and are of cheap construction. They can be more cheaply operated than most of the New England roads. From Portland to Paris, 37 miles, or 78 per cent. of the whole distance, is on a straight line, and no grade exceeding 35 feet to the mile.

Troy and Rutland Railroad.

The bill incorporating a railway company by the name of the Troy and Vermont railroad, authorising the construction of a line from Troy to the line of Vermont, in the direction of Rutland, was passed into a law in New York.

A Check upon Railway Schemes.

There is now a proposition before the Massachusetts Legislature, designed to operate against the numerous speculative railway schemes springing up in that state. It is proposed to withhold the grant of charters in all cases till the line of route is determined by actual survey, and 50 per cent. of the capital in good faith subscribed. The work not to be entered upon till *three-fourths* of the cost of the road is actually provided for, the debts of each company not to exceed at any time *one-fourth* of the amount of the capital paid in. It is doubtful, however, whether a law with such provisions can be passed the present year, though the proposition has strong advocates both in the Legislature and among the capitalists of Boston.

Bridging Lake Champlain.

The bill allowing the Ogdensburgh Railroad Co. to bridge the outlet of Lake Champlain, was defeated in the Senate of New York after having passed the House of Assembly.

Syracuse and Rochester Air Line Railroad.

The bill which passed the House of Assembly, granting a charter for a direct line of railway between Syracuse and Rochester was defeated in the Senate.

New Haven Canal Railroad.

The railway committee of the Massachusetts legislature by a vote of 4 to 3, reported adversely to the bill granting authority to the New Haven Canal railroatod construct their line to West Springfield to a point of junction with the Western Railroad.

The question is now pending before the Legislature, and the liveliest interest is felt as to the result. The opponents of the bill regard the granting of a parallel line as an infringement of the rights granted to the Hartford and New Haven Railroad Co.

Returns of Railroad Companies.

The New York Legislature passed a law requiring more full returns, than have hitherto been made, from the several railroad companies in this state.

The British Navigation Laws.

The bill for the repeal of the Navigation Acts, passed to its third reading in the House of Commons by a majority of 56 votes, after full discussion. Its success in the upper House is regarded as certain.

Mississippi and Ohio Railroad.

The question of subscription of *one million* to this stock submitted last week to the voters of Cincinnati, resulted in ayes 4188, nays 1237—a majority of 2951 in favor of the subscription. The money is to be expended, as far as it will go, in building the road from Cincinnati, the direction bearing, we nnderstand, down the river valley towards Aurora.

Columbus and Lake Erie Railroad.

We have before us the report of the Directors, Treasurer and Engineer of the *Columbus and Lake Erie Railroad Company*, submitted to the stockholders at their annual meeting, on the 20th of March, 1849.

The grading on the whole route between Newark and Mansfield, 60 miles, is nearly finished, and can be got ready for the iron in June next. The report of J. W. Webb, Esq., Engineer, says:

"There are four thousand seven hundred lineal feet of bridging on the whole route; three thousand feet of which are completed—ready for the iron bar. The timber for the remaining seventeen hundred feet is all on the ground, and mostly framed, ready to raise early the coming spring. The abutments are of the most permanent character, being composed of solid masonry; the foundations of which, consisting of timber and plank, are sunk below the beds of the streams, and on these are erected the abutments with hewed stone laid in lime mortar.

The culverts are completed throughout the entire length of the whole sixty miles, and are constructed of the most durable material that could be procured along the line, of stone well dressed and laid in '*range work*,' when it could be done at a reasonable cost; when not, hewed, white, or burr oak timber, have been temporarily substituted; and at the opening of the road, stone can be hauled with cheapness and dispatch to rebuilt the wooden ones when they have failed.

There is now near four miles of the superstructure laid, and ready to receive the iron bar, on the south end of the road, in the vicinity of Newark; also, timber delivered on the line, at different points sufficient to lay ten miles more. The company have erected on the route, two large *steam saw mills*, where plenty of good oak timber could be had contiguous to the line, capable of swing thirty thousand feet (board measure) every twenty-four hours.

With such facilities as these at our command, and in a region of country where timber is abundant, I am justified in the assertion that the timber for the balance of the superstructure *is all provided* for. The curves and grades are favorable for the rapid transportation of heavy freights.

The minimum radius of curvature is two thousand feet, and maximum grade forty feet to the mile.

In the prosecution of the work on your road *so far*, it has been done with a view that it shall, when completed, be unsurpassed in workmanship, durability and strength, by any other in the state, or even in the United States."

Railway Improvements.

SALOON CARRIAGES are now being introduced both upon long lines and lines of pleasure. They have been launched on the Caledonian for the convenience of travellers in a continuous journey of between 400 and 500 miles in or out of London. The interior is divided into two parts by means of a sliding panel, on which are placed two large mirrors, and it is seated with two roomy and easy arm chairs and two sofas covered with morocco. In the centre there is a folding table, and room is left to pass round it. Each division forms a comfortable little parlor. The hangings are of dark blue, edged with white, and the windows are ornamentally stained. Outside the carriage and at either end, a short platform is fixed upon which travellers may stand and enjoy the scenery as the train passes on. They are painted a rich lake color, with the company's arms in the centre. Beds or couches may be made up as they are on shipboard.

We have already introduced to our readers the novelty of *light locomotive passenger carriages*; and our present number includes in its pages a representation of that built by Messrs. Adams. The full detail of its advantages for branch traffic will be found accompanying the engraving; but the cursory reader will be glad of the following summary:—

1st. A dimunition of dead weights as compared with profitable load.
2nd. A saving of fuel.
3rd. A dimunition of expense in "maintainance of way."
4th. A dimunition of capital in rolling stock.
5th. Increased accommodation to the public.
6th. Increased safety by facility of starting and stopping to avoid danger.
7th. Increased safety by lowered centre of gravity, enabling the carriage to become a self-retarding sledge in case of a wheel breaking.
8th. Power of increased speed without damage to the rails or roadway.
9th. Facility for the cheaper structure of railways.—*Railway Chronicle.*

To Railway Companies and Principal Engineers.

AN ENGINEER and Land Surveyor, of ability and good reference, is prepared to conduct surveys, or take charge of work. Address
MR. DAIGERFIELD, Lithographer,
2t*15 2 Wall street, New York.

ENGINEERS.

Arrowsmith, A. T.,
Buckfield Branch Railroad, Buckfield, Me.

Berrien, John M.,
Michigan Central Railroad, Marshall, Mich.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburgh Railroad, Boston, Mass.

Ford, James K.,
New York.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Garnett, C. F. M.
Nashville and Chattanooga R. R., Nashville, Tenn.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Higgins, B.
Mansfield and Sandusky Railroad, Sandusky City, O.

Johnson, Edwin F.
New York and Boston Railroad, Middletown Ct.

Jones C. F.,
South Oyster Bay, L. I.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Reynolds, L. O.,
Central Railroad, Savannah, Ga.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad,, Pittsburgh, Pa.

Robinson, James P.,
Aandroscggin & Kennebec Railroad, Waterville, Me.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Stark, George.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Whipple, S.,
Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams; Charles H.,
Milwaukie, Wisconsin.

BUSINESS CARDS.

James Laurie, *Civil Engineer,*
No. 23 Railroad Exchange, Boston, Mass.
Railroad Routes explored and surveyed. Estimates, Plans and Specifications furnished for Dams, Bridges, Wharves, and all Engineering Structures.
October 14, 1848. 6m*

James Herron, *Civil Engineer,*
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

IRON.

Pig and Bloom Iron.

THE Subscribers are Agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by
A. WRIGHT & NEPHEW,
Vine Street Wharf, Philadelphia.

Railroad Iron.

THE NEW JERSEY IRON CO'S WORKS AT Boonton, are now in full operation, and can execute orders for Railroad Bars of any required pattern, equal in quality to any made in this country. Apply to DUDLEY B. FULLER, *Agent*,
139 Greenwich street.

New York, October 25, 1848.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
22 South William street,

February 3, 1849. New York.

English Railroad Iron.

3000 Tons H pattern Rails in store, and to arrive this Spring—58 and 60 lbs per yard; of an approved pattern, best English make, each bar being stamped with the manufacturers's name, and inspected before shipment at the works in Wales. For sale by DAVIS, BROOKS & CO.,
68 Broad srteet.

March 18, 1849 2m.11

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*
Troy, N.Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N.Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehannah river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied wtth rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.,
45 North Water St., Philadelphia.

March 15, 1849.

Railroad Iron.

THE TRENTON IRON COMPANY ARE NOW turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to
COOPER & HEWITT, *Agents*.
17 Burling Slip, New York.

October 30, 1848.

Railroad Iron.

THE Undersigned offer for sale 3000 Tons Railroad Iron at a fixed price, to be made of any required ordinary section, and of approved stamp.

They are generally prepared to contract for the delivery of Railroad Iron, Pig, Bar and Sheet Iron—or to take orders for the same—all of favorite brands, and on the usual terms. ILLIUS & MAKIN.
41 Broad street.

March 29, 1849. 3m.13

Railroad Iron, Pig Iron, &c.

600 Tons of T Rail 60 lbs. per yard.
25 Tons of 2½ by ½ Flat Bars.
25 Tons of 2½ by 9-16 Flat Bars.
100 Tons No. 1 Gartshrorie.
100 Tons Welsh Forge Pigs.
For Sale by A. & G. RALSTON & CO.
No. 4 So. Front St., *Philadelphia*.

Railroad Iron.

RAILROAD IRON & LOCOMOTIVE TYRES imported to order, and constantly on hand, by
A. & G. RALSTON,
4 South Front St., Philadelphia.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNdersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS,
Point Pleasant Foundry.

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co., }
March 12, 1848. }

Wanted Immediately.

8000 Tons of Inverted T Rail wanted, of about 60 lbs. to the yard, for laying 80 miles of road, by the Columbus and Lake Erie Railroad Company, and Mansfield and Sandusky Railroad Company, 60 miles of which is new road, and to re-lay 20 miles on the last mentioned road.

Proposals will be received until May 15, addressed (under seal) to me, at this place.

Proposals are invited for cash on delivery, and also for 7 per cent. bonds, payable in New York or Boston. Delivery may be made at Oswego, Albany, or New York, or at Portsmouth, on the Ohio river, Montreal, Canada, or at Sandusky city. American Iron would be prefered, except *good* English. Parties proposing, will please name the place preferred for delivery. Delivery to commence as early as June 1st, and complete as early as October 1st, if practicable.

B. HIGGINS, *Superintendent, etc.*

Sandusky City, Ohio, March 15, 1849. 2m.13

T. & C. Wason,

MANUFACTURERS OF EVERY STYLE OF Freight and Baggage Cars—Forty rods east of the depot Springfield, Mass.

Running parts in sets complete. Wheels, axles, or any part of cars furnished and fitted up at short notice and in the best manner.

N. B. Particular attention paid to the manufacture of the *most improved Freight Cars*. We refer to the New Haven, Hartford and Springfield; Connecticut River; Harlem; Housatonic, and Western, Massachusetts, Railroads, where our cars are now in constant use.

SPRING STEEL FOR LOCOMOTIVES, TENders and Cars.—The subscriber is engaged in manufacturing spring steel from 1¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address J. F. WINSLOW, *Agent*,
Albany Iron and Nail Works.

SCHENECTADY LOCOMOTIVE WORKS
SCHENECTADY, N. Y.

THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pumps and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron.

Wrought Iron Tires made any required size, and Tire Bars bent and welded with dispatch.

Chilled Wheels for Cars, Tucks and Tenders, made from the toughest iron.

Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by
E. S. NORRIS.

April 11, 1849.

Extension of the Baltimore & Ohio Railroad.

TO CONTRACTORS FOR GRADUATION AND MASONRY.

PROPOSALS are invited for the Graduation and Masonry of the following described sections of this road—the sections averaging a mile in length—commencing in the town of Cumberland; Sections 1, 2, 6, 7, 8 and 10, will be let, embracing considerable rock work along the Potomac river bluffs, and the masonry of several bridges on Section st. Also all the sections from 30 to 45 inclusive, (excepting sections 43 and 44) beginning 28 miles from Cumberland, about a mile below the mouth of Savage river, and terminating at the summit of the mountain. The work upon these sections is heavy, containing much rock excavation and 2 tunnels, each about 600 feet in length, and a stone bridge of considerable size. The whole number of sections now to be let is 20. In the course of the spring and summer upwards of 30 more heavy sections will be put under contract between Cumberland and Three Forks Creek. The remaining sections between those points, and other work beyond the latter, will be let in the spring of 1850.

Specifications of the work on the 20 sections now to be let, will be ready by the 25th of March current.—They will be distributed from the company's offices in Baltimore, Frederick, Harper's Ferry, Cumberland and Washington. The proposals will be directed to the undersigned, at No. 23 Hanover street, Baltimore, and will be received until Saturday, the 28th of April, inclusive. Before making bids the line should be thoroughly examined, and the resident engineers will be in attendance thereon to give information. The most satisfactory testimonials will be demanded. The payments will be made in cash, reserving the usual 20 per cent until the completion of the contract. The most energetic prosecution of the work will be required. By order of the President and Directors.

BENJ. H. LATROBE, *Chief Engineer*.

Baltimore, March 14, 1849 5t.12

UPPER CANADA MINING COMPANY.

INCORPORATED BY ACT OF PARLIAMENT.

NOTICE is hereby given, that an ASSESSMENT OF ONE SHILLING AND THREE PENCE PER SHARE has been levied on the *STOCK OF THE UPPER CANADA MINING COMPANY*—one half thereof, or Seven Pence Halfpenny per share, being payable, at the office of the Company, in Hamilton, or to Messrs. W. & J. Currie, Agents, Wall St. New York, on the *First Day of April* next, and the other half on the *First day of July* next ensuing. By order, J. D. Brondgeest,
Secretary U. C. M. C.

Hamilton, 24th February, 1849. 12tf

WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—
Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Direct Action Engines
FOR STEAMBOATS.

THE PATENT DOUBLE CYLINDERS,

AND ALSO

THE ANNULAR RING PISTON ENGINES,

of Messrs. Maudslay, Sons & Field, of London, may be built in the United States, under license, which can be obtained of their agent,

THOMAS PROSSER, C. E.
28 Platt street, New York.

May 6, 1848.

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1¼ to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,
12 Platt street, New York.

JOB CUTLER, *Patentee.*

☞ These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

DEAN, PACKARD & MILLS,
MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS
OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and

SHAFTING FOR FACTORIES.

☞ *The above may be had at order at our Car Factory,*

REUEL DEAN,
ELIJAH PACKARD,
ISAAC MILLS,
} SPRINGFIELD, MASS.

1y48

Mattewan Machine Works.

THE Mattewan Company have added to their Machine Works an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for *Locomotive Engines* of every size and pattern—also *Tenders, Wheels, Axles,* and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC., Of any required size or pattern, arranged for driving *Cotton, Woollen, or other Mills,* can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY, Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,

Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS.

Turning Lathes, Slabbing, Planing, Cutting and *Drilling Machines,* of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at 39 Pine street, New York.

WM. B. LEONARD, *Agent.*

Devlan's Machinery Oil.

THE Subscribers, Agents for P. S. Devlan & Co's "Patent Lubricating Oil"—price 80c. per gallon 4 mos. or 3 per cent off for cash.

We refer to the following certificate of Messrs. Norris Brothers, in whose works, any one by calling can see the oil in use and judge for themselves.

NORRIS' LOCOMOTIVE WORKS.
Philadelphia, April 2, 1849.

We have been using throughout our Works, during the last six weeks, "Devlan's Lubricating Oil," and so far as we have been able to judge from its use, we think it paeferable to the sperm oil generally used, for both heavy and light bearings. NORRIS BROTHERS.

For sale by ALLEN & NEEDLES,
22 & 23 South Wharves,
14tf Philadelphia Pa.

LAP—WELDED
WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,
FROM 1 1-2 TO 8 INCHES DIAMETER.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,
Patentee.
28 Platt street, New York.

THE NEWCASTLE MANUFACTURING Co. continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack Screws, Wrought Iron Work and Brass and Iron Castings, of all kinds connected with Steamboats. Railroads, etc.; Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
a45 President of the Newcastle Manuf. Co.

TO RAILROAD COMPANIES AND MANUfacturers of Railroad Machinery. The subscribers have for sale American and English Bar Iron, of all sizes; English Blister, Cast, Shear and Spring Steel; Juniata Rods; Car Axles, made of double refined iron; Sheet and Boiler Iron, cut to pattern; Tires for Locomotive Engines, and other railroad carriage wheels, made from common and double refined B. O. Iron; the latter a very superior article. The Tires are made by Messrs. Baldwin and Whitney, Locomotive Engine Manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,
a45 N. E. cor. 12th and Market sts., Philad., Pa.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee.

G. A. NICOLLS,
Reading, Pa.

MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, *Patterson, N. J.* The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

Railroad Work.—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tyres; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tyres. Axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Patterson, N. J., or 60 Wall St., New York.

IRON BRIDGES, BRIDGE & ROOF BOLTS, etc. STARKS & PRUYN, of Albany, New York, having at great expense established a manufactory with every facility of Machinery for Manufacturing Iron Bridges, Bridge and Roof Bolts, together with all kinds of the larger sizes of Screw Bolts, Iron Railings, Steam Boilers, and every description of Wrought Iron Work, are prepared to furnish to order, on the shortest notice, any of the above branches, of the very best of American Refined Iron, and at the lowest rates.

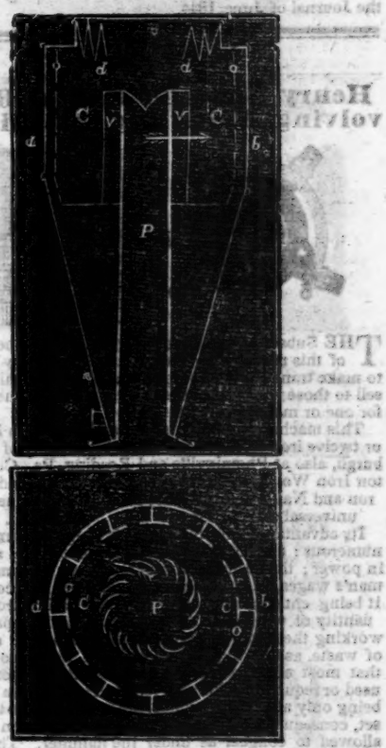
During the past year, S. & P. have furnished several Iron Bridges for the Erie Canal, Albany Basin, etc., —and a large amount of Railroad Bridge Bolts, all of which have given the most perfect satisfaction.

They are permitted to refer to the following gentlemen:

Charles Cook, Nelson J. Beach, Jacob Hinds,	Canal Commissioners of the State of New York.
Willard Smith, Esq.,	Engineer of the Bridges for the Albany Basin.
Messrs. Stone & Harris,	Railroad Bridge Builders, Springfield, Mass.
Mr. Wm. Howe,	
Mr. S. Whipple,	Engineer & Bridge Builder, Utica, N. Y.

January 1, 1849.

FRENCH & BAIRD'S
Patent Spark Arrester.



TO THOSE INTERESTED IN RAILROADS. Railroad Directors and Managers are respectfully invited to examine an improved Spark Arrester recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both Passenger and Freight Engines, and have been brought to such a state of perfection, that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust, they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase, or obtain further information in regard to their merits.

R. L. Stevens, president Camden and Amboy railroad company; Rich'd Peters, sup't Georgia railroad, Augusta, Ga.; G. A. Nicolls, sup't Reading railroad, Reading, Pa.; W. E. Morris, pres't Philadelphia, Germantown and Norristown railroad company, Philad.; E. B. Dudley, pres't W. and R. railroad co., Wilmington, N. C.; Col. Jas. Gadsden, pres't S. Carolina railroad co., Charleston, S. C.; W. C. Walker, agent V. and J. railroad, Vicksburg, Miss.; R. S. Van Rensselaer, sup't Hart. and N. H. railroad; W. R. McKee, sup't Lexington and Ohio railroad; T. L. Smith, sup't N. Jersey railroad and transp. co; J. Elliott, sup't M. P., Philadel. and Wilm. railroad; J. O. Sterns, sup't Elizabethtown and Somerville railroad; R. R. Cuyler, pres't Central railroad, Savannah, Ga.; J. D. Gray, sup't Macon, (Ga.) railroad; J. H. Cleveland, sup't of Southern railroad, Monroe, Mich.; M. F. Crittenden, sup't mo.power Central railroad, Detroit, Mich.; G. B. Fisk, pres't Long Island railroad, Brooklyn, L. I.

Orders for these chimneys and arresters, addressed to the subscribers, care of Baldwin and Whitney, of Philadelphia, will be promptly executed.

The subscribers will dispose of single rights, or rights for one or more States on reasonable terms.

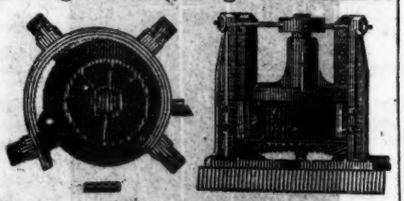
FRENCH & BAIRD.

Philadelphia, Pa., April 6, 1844.

The letters in the figures refer to the article given in the Journal of June, 1844.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy ron and Nail Factory, Troy, N. Y., where it has giv- universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shinglers, or hammersman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the uantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll rounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

ENGINE AND CAR WORKS.

DAVENPORT & BRIDGES,

HAVING ASSOCIATED WITH THEM

MR. LEWIS KIRK, OF READING, PA.,

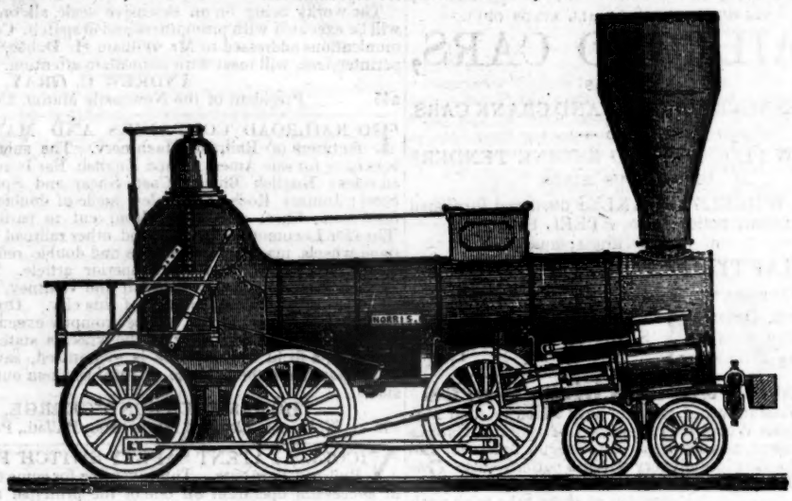
And recently enlarged their Establishment, (making it now the most extensive in the United States,) they are prepared to manufacture to order Locomotive Engines and Cars of every description. Stationary Engines, Steam Hammers, Boilers, and all kinds of Railroad Machinery. Also, Castings and Forge Irons of all kinds —including Chilled Wheels, Frogs, Chairs, Switches, Car Axles, and Locomotive Cranks, Connecting Rods, Steel Springs, Bolts, etc., etc. Orders from all parts of the country solicited for Engines and Cars, or any part or parts of the same. All orders will be furnished at short notice, and on as good terms as any manufactory in the country. Coaches pass our works every fifteen minutes during the day, from Brattle St., Boston.

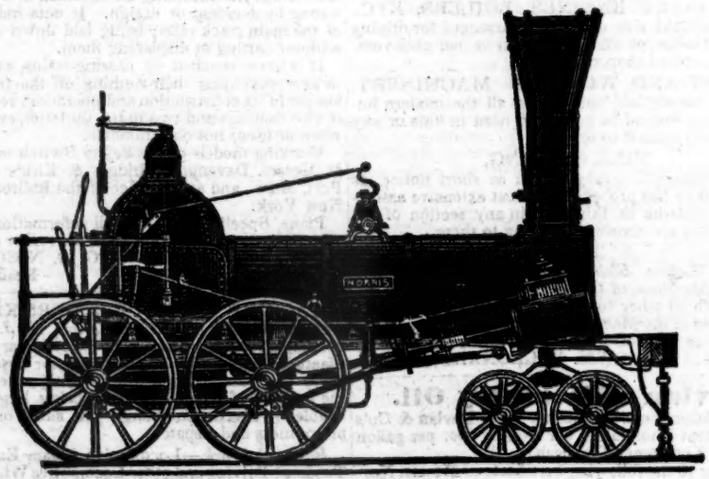
DAVENPORT, BRIDGES & KIRK.

Cambridgeport, Mass., February 16th, 1849.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusunl advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

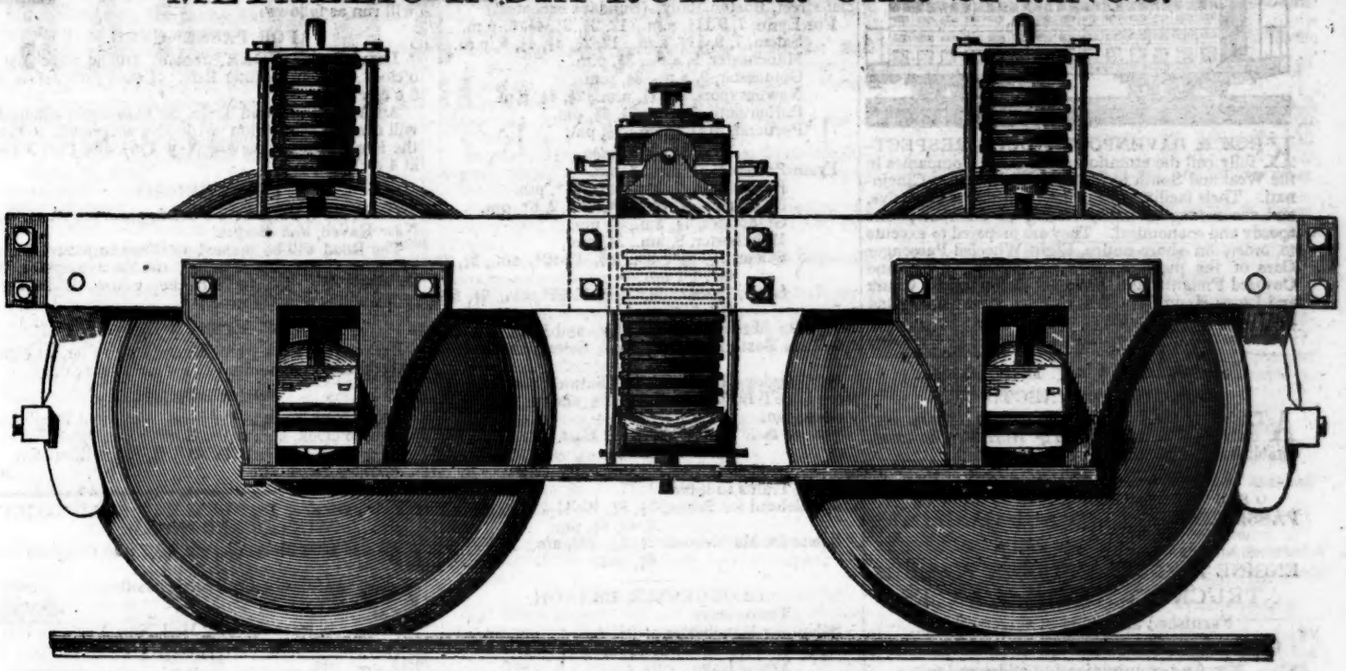
Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS' BROTHERS.

FOWLER M. RAY'S

METALLIC INDIA RUBBER CAR SPRINGS.



THE NEW ENGLAND CAR COMPANY have introduced these Springs, and they are now in operation on every Railroad terminating in Boston, and several others in New England and the Middle States. Their qualities are well understood, or may be readily ascertained by every person interested to know them. They require no recommendation from the Company. The only known compound of India Rubber good for anything for this purpose is the Vulcanised India Rubber, invented by Charles Goodyear, of New Haven, and the application of it, and the form in which it is used, were invented by F. M. Ray, of New York. The right to manufacture and sell the substance itself for the purpose of Railroad Carriage Springs, as well as the form and application of it, are held exclusively by the New England Car Company. No other Company, or individual, has any right to sell or use it for such purpose, or has attempted so to use it in this country.

The New England Car Company guarantee the right to use the article they sell for Railroad Carriage Springs only, against all adverse rights, whether under patents or otherwise; and all persons and corporations are cautioned against a similar use of the article, when purchased of any other parties.

The Springs they sell are all manufactured in a uniform manner, and under the immediate inspection of their own Agent, and have been proved and known to answer the purpose. None have been manufactured in this country or imported from abroad besides their own, which would at all answer the purpose; and if any such should be produced, it cannot be used for Car Springs, while Goodyear's patents, and the right of the New England Car Company under them, remain in force.

The New England Car Company are now prepared to answer orders for all that may be called for, on reasonable notice, and uniform and equitable terms.—They invite the most careful examination, and the severest scrutiny, into the merits of their Springs, wherever they have applied them. And if after such examination, your Company should judge it for their interest to adopt them, the N. E. Car Company would respectfully invite the patronage which they think they deserve, and are confident of receiving at your hands.

EDWARD CRANE, *Agent*,
Office 99 State-street.

Orders may also be left with WM. RIDER & BROTHERS, No. 58 Liberty-street, New York, or with
F. M. RAY, *Agent*,
100 Broadway, N. Y.

The following article from the pen of Mr. HALE, the President of the Boston and Worcester Railroad, expresses his opinion of this important improvement, as published in the Boston Daily Advertiser of June 7, 1848. He says:—

"Of the numerous uses to which the wonderful elasticity and durability of India Rubber renders this material applicable, we are hardly aware of one in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad. It is there used, not only for the springs on which the car rests, but for the springs attached to the draw bar at each end of the car, to prevent any jar on the sudden advancement or interruption of the motion of the car. For both these purposes it appears to be admirably adapted, and we do not learn, that during the period in which it has been used, any defect in it has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think than any other spring which we have ever seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is simple in its form and application, extremely light, and little liable to get out of repair.—During the period of some months, in which we have seen the springs in operation, there is no apparent wear or diminution of their efficacy."

The above statement of Mr. Hale agrees with my own observation in all particulars.

WM. PARKER, Supt., B. & W. R. R.
June 8, 1848.

I fully concur in the foregoing statement, from practical observation of its use for the last five months, on the Boston and Worcester railroad corporation cars.

D. N. PICKERING, Jr.,
Supt. Car Building B. & W. R. R.
Boston, June 10, 1848.

The New England Car Company have introduced their Vulcanized India Rubber Car Springs on the roads with which we are respectively connected, and we fully concur with Mr. Hale in the above opinion of their character and properties.

DAVENPORT & BRIDGES, Car Builders.
BRADLEY & RICE, Car Builders.
Boston, June, 1848.

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by
JOHN W. LAWRENCE,
142 Front-street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y.

ENGINEERS' AND SURVEYERS'
INSTRUMENTS MADE BY
EDMUND DRAPER,
Surviving partner of
STANCLIFFE & DRAPER.

No 23 Pear street, below Walnut,
y10 near Third, Philadelphia.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ⅛ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2300 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER Flues.

Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

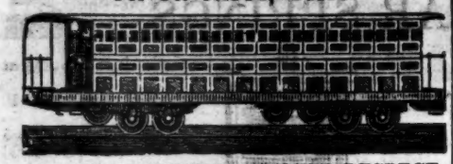
PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES. — The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, *Agent*.
Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co., Albany; Merritt, & Co., New York; E. Pratt & Brother, Baltimore, Md.

CAR MANUFACTORY,

CINCINNATI, OHIO.



KECK & DAVENPORT WOULD RESPECTfully call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description. Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, Oct. 2, 1848. 44tf

Norwich Car Factory,

NORWICH, CONNECTICUT.

AT the head of navigation on the River *Thames*, and on the line of the *Norwich & Worcester Railroad*, established for the manufactory of

RAILROAD CARS,

OF EVERY DESCRIPTION, VIZ:

PASSENGER, FREIGHT AND HAND CARS,

ALSO, VARIOUS KINDS OF

ENGINE TENDERS AND SNOW PLOUGHS.

TRUCKS, WHEELS & AXLES

Furnished and fitted at short notice.

Orders executed with promptness and despatch.

☞ Any communication addressed to

JAMES D. MOWRY,

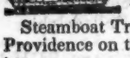
General Agent,

Norwich, Conn.,

Will meet with immediate attention. 1y8

RAILROADS.

BOSTON AND PROVIDENCE RAILROAD. On and after MONDAY, OCTOBER 2d, the



Trains will run as follows:—

Steamboat Train—Leave Boston at 5 pm Leaves Providence on the arrival of the train from Stonington.

Accommodation Trains—Leave Boston at 8 am., and 3½ pm. Leave Providence at 8½, a.m., and 3½, pm.

Dedham Trains—Leave Boston at 9 am., 12 m., 3, 6, and 10½ pm. Leave Dedham at 7½, 10½, am., 1½, 4½, and 9 pm.

Stoughton Trains—Leave Boston at 11½ am., and 4½ pm. Leave Stoughton at 8½ am., and 2½ pm.

Freight Trains—Leave Boston at 11 am., and 6 pm. Leave Providence at 4 am., and 7.40 am.

On and after Wednesday, Nov. 1, the DEDHAM TRAIN will run as follows: Leave Boston at 9 am., 12 m., 3, 5½, and 10½ pm. Leave Dedham at 8, 10½, am., 1½, 4½, and 9 pm.

WM. RAYMOND LEE, Sup't.

NORWICH AND WORCESTER RAILROAD. Winter Arrangement.—1848.

Accommodation Trains daily (Sundays excepted.)

Leave Norwich at 6 am., 12 m., and 2½ pm.

Leave Worcester at 6½ and 10 am., and 4½ pm., connecting with the trains of the Boston and Worcester, and Providence and Worcester railroads.

New York & Boston Line. Railroad & Steamers. Leave New York and Boston daily, Sundays excepted, at 5 pm.—At New York from pier No. 1, North River.—At Boston from corner Lincoln and Beach streets, opposite United States Hotel. The steamboat train stops only at Framingham, Worcester, Danielsonville and Norwich.

Freight Trains leave Norwich and Worcester daily, Sundays excepted.—From Worcester at 6½ am., from Norwich at 7 am.

☞ *Fares are Less when paid for Tickets than when paid in the Cars.* ☜

32 1y. S. H. P. LEE, Jr., Sup't.

EASTERN RAILROAD, WINTER ARRANGEment. On and after MONDAY, Oct. 2, 1848,

Trains will leave Eastern Railroad Depot, Eastern Avenue, Commercial-street, Boston, daily, (Sundays excepted.)

For Lynn, 7, 9 11½, a.m., 12, 2½, 3½, 4½, 6, p.m.
Salem, 7, 9, 11½, a.m., 12, 2½, 3½, 4½, 6, p.m.
Manchester, 9, a.m., 3½, p.m.
Gloucester, 9, a.m., 3½, p.m.
Newburyport, 7, 11½, a.m., 2½, 4½, p.m.
Portsmouth, 7, am., 2½, 4½, pm.
Portland, Me., 7, am., 2½, pm.

And for Boston,

From Portland, 7½, am., 3, pm.
Portsmouth, 7, 9½*, am., 5½*, pm.
Newburyport, 7½, 10½*, am., 2, 6*, pm.
Gloucester, 7½, am., 3½ pm.
Manchester, 8, am., 3½, pm.,
Salem, 7½, 8½*, 9*, 10½, 11-40*, am., 2½, 3*, 4½*, 7*, pm.
Lynn, 7½, 8½*, 9½*, 10½, 11-55*, am., 2½, 3½*, 4½*, 7½*, pm.

☞ On Monday, Wednesday, and Friday, a train will leave Boston for Lynn and Salem, at 7 o'clock, p.m.

On Tuesday, Thursday, and Saturday, a train wil leave EAST BOSTON for Lynn and Salem, at 10½ o'clock, pm.

* *Or on their arrival from the East.*

MARBLEHEAD BRANCH.

Trains to leave
Marblehead for Salem, 7½, 8½, 10, 11-25, am. 2, 4½, 6½, pm.
Salem for Marblehead, 7½, 9½, 10½, am., 12½, 3½, 5½, 6½, pm.

GLOUCESTER BRANCH.

Trains leave
Salem for Manchester at 9½, am., 4½, pm.
Salem for Gloucester at 9½, am., 4½, pm.
Trains leave
Gloucester for Salem at 7½, am., 3½ pm.
Manchester for Salem at 8, am., 3½ pm.
Freight Trains each way daily. Office 1 Merchants' Row, Boston.

Feb. 3. JOHN KINSMAN, Superintendent.

ESSEX RAILROAD—SALEM to LAWRENCE, through Danvers, New Mills, North Danvers, Middleton, and North Andover.

On and after Monday, Oct. 2, 1848,

trains leave daily (Sundays excepted,) Eastern Railroad Depot, Washington-st.

Salem for South Danvers at 7.45, 9, am., 12.45, 3.15, 6.45, pm.
Salem for North Danvers at 7.45, 9, am., 12.45, 3.15, pm.
Salem for Lawrence, 9*, am., 3.15*, pm.
Danvers " 9.10, am., 3.15, pm.
North Danvers" 9.20, am., 3.35, pm.
Middleton " 9.30, am., 3.45, pm.
North Andover " 10, am., 4.20, pm.
South Danvers for Salem at 7.45, 8.45, 11.30, am. 2, 45.5, pm.
North Danvers " 8.20, 11.10, am., 1.40, 5.40, pm.
Middleton " 11, am., 4.30, pm.
North Andover " 10.35, am., 5.05, pm.
Lawrence " 10.30*, am., 5*, pm.

* These trains will not stop at Frye's Mills nor Grove-st.

JOHN KINSMAN, Superintendent.

Salem, Oct. 2, 1848.

BOSTON AND MAINE RAILROAD.

Spring Arrangement, 1849.

Outward Trains from Boston

For Portland at 6½ am. and 2½ pm.
For Rochester at 6½ am., 2½ pm.
For Great Falls at 6½ am., 2½, 4½ pm.
For Haverhill at 6½ and 12 m., 2½, 4½ 6 pm.
For Lawrence at 6½, 9, am., 12 m., 2½, 4½, 6, 7½ pm.
For Reading 6½, 9 am., 12 m., 2½, 4½, 6, 7½, 9½* pm.

Inward trains for Boston

From Portland at 7½ am., 3 pm.
From Rochester at 9 am., 4½ pm.
From Great Falls at 6½, 9½ am., 4½ pm.
From Haverhill at 7, 8½, 11 am., 3, 6½ pm.
From Lawrence at 6, 7½, 8½, 11½, am., 1½, 3½, 7 pm.
From Reading at 6½, 7½, 9, am., 12 m., 2, 3½, 6, 7½ pm.

MEDFORD BRANCH TRAINS.

Leave Boston at 7, 9½ am., 12½, 2½, 5½, 6½, 9½* pm.
Leave Medford at 6½, 8, 10½ am., 2, 4, 5½, 6½, pm.

* On Thursdays, 2 hours; on Saturdays, 1 hour later. CHAS. MINOT, Super't.

Boston, March 27, 1849.

NEW YORK AND ERIE RAILROAD. WINTER ARRANGEMENT.

On Monday, January 1st, and until further notice, the trains

will run as follows:

FOR PASSENGERS.

Leave NEW YORK, (foot of Duane street,) at 7 o'clock, am., by steamer Erie. Leave Port Jervis at 6 o'clock am.

An Accommodation Train, for passengers and milk, will run in connection with the steamboat towing the Freight Barge, leaving New York and Port Jervis at 4 o'clock pm.

FOR FREIGHT.

Leave New York at 4 o'clock, pm., per steamboat New Haven, and Barges.

The Road will be opened to Binghampton and intermediate places on Monday, the 8th January, 1849, on which day, and until further notice, the through trains will run as follows:

FOR PASSENGERS.

Leave New York from Duane street Pier, at eight o'clock, and Binghamton at 7 o'clock, am., daily.

FOR FREIGHT.

Leave New York at 4 o'clock, pm., and Binghamton at 7 o'clock, am., daily, Sundays excepted.

H. C. SEYMOUR, Superintendent.

January 1st, 1849. ja3

NEW YORK & HARLEM RAILROAD, DAILY. WINTER ARRANGEMENT.

ON and after December 1st, 1848, the Cars will run

as follows, until further notice:—

Trains will leave the City Hall, New York, for Harlem and Morrisiana at 7, 9, 9.30, 11, am. 12 m., 2, 4, 4.15, 5.30, pm.

Trains will leave the City Hall, New York, for Fordham and Williams Bridge, at 7 30 and 9 30 am., 12 m., 2, 4 15, 5 30 pm.

Trains will leave the City Hall, New York, for Hunt's Bridge, Underhill's and Hart's Corners, at 9 30 am., 4 15 pm.

Trains will leave the City Hall, New York, for Tuckahoe and White Plains, at 7 30 and 9 30 am., 3 and 4 15 pm.

Trains will leave Davis' Brook, Pleasantville, Chapequa, Mount Kisko, Bedford, Mechanicsville, Purdy's and Croton Falls, at 7 30 and 9 30 am., 3 pm.

NOTICE—Passengers are reminded of the great danger of standing upon the platform of the cars, and hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave

Morisiana and Harlem at 7 20,8, 8 50, 10 am., 12m., 1 35, 3, 3 45, 5, 5 35 pm.
Fordham and William's Bridge at 7, 8 30, 9 50 am., 1 15, 3 25, 5 20 pm.
Hunt's Bridge at 8 20, am., 3 18 pm.
Underhill's Road at 8 10 am., 3 08 pm.
Tuckahoe at 8 05, 9 30 am., 3 05, 5 pm.
Hart's Corners at 7 55 am., 2 52 pm.
White Plains at 7 45, 9 10 am., 2 45, 4 40 pm.
Davis' Brook at 9 am., 2 35, 4 30 pm.
Pleasantville at 8 49 am., 2 20, 4 19 pm.
Mount Kisko at 8 30 am., 2, 4 pm.
Bedford at 8 25 am., 1 55, 3 55 pm.
Mechanicsville at 8 15 am., 1 45, 3 45 pm.
Purdy's at 8 05 am., 1 35, 3 35 pm.
Croton Falls, at 8 am., 1 30, 3 30 pm.

The trains for Harlem and Morrisiana leaving City Hall at 7, 9, 9 30, 11, 12, 2, 4, and 5 30, and from Morisiana and Harlem at 7 20, 8, 10, 12, 1 35, 3, 3 45, and 5 oclock, will land and receive passengers at 27th st., 42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th, and 132d streets.

The 7 30 am., and 3 pm. Trains from New York to Croton Falls, and the 8 am. Train from Croton Falls will not stop between White Plains and New York, except at Tuckahoe, Williams Bridge and Fordham.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 32d street.

Freight Trains leave New York at 6 am. and 1 pm.: leave Croton Falls at 7 am. and 2 30 pm., Sundays excepted.

NOTICE—On Sundays the 7 am. to Harlem and Morrisiana, returning at 8 o'clock, and the 7 30 am. to Croton Falls, returning 1 30 pm., will be omitted, and the 7 am. from Williams Bridge will leave at 7 40, and Morrisiania and Harlem at 8 o'clock am. d1

ST. LAWRENCE & ATLANTIC RAILROAD COMPANY.

Notice is hereby given that the Trains run twice per day between Montreal and St. Hyacinthe, leaving each terminus alternately, until further notice.

The first train starts from St. Hyacinthe at 7 o'clock a.m., reaching Montreal at 8¼ a.m., leaving Montreal at 2 p.m., and reaching St. Hyacinthe at 3¼ p.m.

The second train leaves Montreal at 9 o'clock, a.m., reaching St. Hyacinthe at 10¼ a.m., leaving St. Hyacinthe at 4 p.m., reaches Montreal at 5¼ p.m.

THOMAS STEERS, *Secretary.*

March 31, 1849.

BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains run daily, except Sundays, as follows:

Leaves Baltimore at - - - -	9 am. and 3½ pm.
Arrives at - - - - -	9 am. and 6½ pm.
Leaves York at - - - -	5 am. and 3 pm.
Arrives at - - - - -	12½ pm. & 8 pm.
Leaves York for Columbia at -	1½ pm. & 8 am.
Leaves Columbia for York at -	8 am. & 2 pm.

Fare:

Fare to York - - - -	$1 50
" Wrightsville - - - -	2 00
" Columbia - - - -	2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg - - - - - -	$9
Or via Lancaster by railroad - - -	10
Through tickets to Harrisburg or Gettysburg -	3

In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owning's Mill, arriving at the Mills at - - 5½ pm.

Returning, leaves Owning's Mills at - - 7 am.

D. C. H. BORDLEY, Sup't.

31 1y Ticket Office, 63 North st.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.		Between Augusta and Dalton. 271 miles.	Between Charleston, and Dalton. 408 miles.
1st class	Boxes of Hats, Bonnets, and Furniture, per cubic foot - -	$0 18	$0 28
2d class	Boxes and Bales of Dry Goods, Sadlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class	Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class	Flour Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc. - - -	0 40	0 65
	Cotton, per 100 lbs. -	0 45	0 70
	Molasses per hogshead -	8 50	13 50
	" " barrel - -	2 50	4 25
	Salt per bushel - -	0 18	
	Salt per Liverpool sack -	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows - -	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freights payable at Dalton.

F. C. ARMS,

44*1y Sup't of Transportation.

LITTLE MIAMI RAILROAD.—WINTER ARRANGEMENT.

Change of Hours.

On and after Thursday, November 9th, 1848, until further notice, Passenger Trains will run as follows:

Leave Depot East Front street at 9½ o'clock, am., and 2½ o'clock, p.m., for Milford, Foster's Crossings, Deerfield, Morrow, Waynesville, Spring Valley, Xenia, Yellow Springs, and Springfield.

Returning, leaves Springfield, at 2½ o'clock, and 9½ o'clock, am.

Passengers for New York, Boston, and intermediate points, should take the 9½ o'clock, am., Train from Cincinnati.

Passengers for Columbus, Zanesville, Wheeling and intermediate towns, should take the 9½ o'clock, am., Train.

The Ohio Stage Company are running the following lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinna ti. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 2½ o'clock, pm. Train from Cincinnati.

The 2½, pm., Train from Cincinnati, and 2½, am., Train from Springfield, are intended for the accommodation of Way Passengers only, and will be eight hours on the road.

Fare from Cincinnati to		Xenia - -	$1 90
Do	do	Springfield - -	2 50
Do	do	Sandusky City -	6 50
Do	do	Buffalo - -	10 00
Do	do	Columbus - -	4 50

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENTS, Superintendent.

☞ The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value to that amount.

BALTIMORE AND OHIO RAILROAD, MAIN STEM.

The Train carrying the Great Western Mail leaves Baltimore every morning at 7½, and Cumberland at 8 o'clock passing Ellicott's Mills, Frederick, Harper's Ferry, Martinsburgh and Hancock, connecting daily each way with—the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harpers Ferry—with the various railroad and steamboat lines between Baltimore and Philadelphia, and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P. M. Fare between these points $7, and 4 cents per mile for less distances.—Fare through to Wheeling $11, and time about 36 hours, to Pittsburgh $10, and time about 32 hours.—Through tickets from Philadelphia to Wheeling $13, to Pittsburgh $12. Extra train daily, except Sundays, from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M., and 5 P. M., and 12 at night from Baltimore, and at 6 A. M. and 5½ P. M. from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington, and the Relay House. Fare $1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for immediate distances. s13 y1

PHILADELPHIA, WILMINGTON, & BALTIMORE RAILROAD.

Summer Arrangement.

April 1st, 1849.—Fare $3.

Leave Philadelphia 8½ am., and 10 pm.
Leave Baltimore 9 am, and 8 pm.
Sunday—Leave Philadelphia at 10 pm.
" " Baltimore at 8 pm.

Trains stop at way stations.

Charleston, S. C.

Through tickets Philadelphia to Charleston, $20.

Pittsburg and Wheeling.

Through ticket, Philadelphia to Pittsburg, $12.
" " Wheeling, 13.

Through tickets sold at Philadelphia office only.

Wilmington Accommodation.

Leaves Philadelphia at 12 m. 4 and 7 pm.
Leaves Wilmington at 7½ am., 4½ and 7 pm.

Newcastle Line.

Leave Philadelphia at 2½ pm.—Baltimore at 1½ pm.
Fare $3.—Second class, $2.

N.B.—Extra baggage charged for.

I. R TRIMBLE, Gen. Supt.

PHILADELPHIA & READING RAILROAD.

Passenger Train Arrangement for 1848.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock am.

The Train from Philadelphia arrives at Reading at 12 18 m.

The Train from Pottsville arrives at Reading at 10 43 am.

	Fares.	Miles.	No. 1.	No. 2
Between Phila. and Pottsville,		92	$3.50 and	$3.00
" "	Reading	58	2.25 and	1.90
" Pottsville	"	34	1.40 and	1.20

Five minutes allowed at Reading, and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets. 8tf.

CENTRAL RAILROAD—FROM SAVANNAH to Macon. Distance 190 miles.

This Road is open for the transportation of Passengers & Freight

Rate of Passage - -	$8 00. Freight—
On weight goods generally,	50 cts. per hundred
On measurement goods -	13 cts. per cubic ft.
On brls. wet (except molasses and oil) - -	1 50 per barrel.
On brls. dry (except lime) -	80 cts. per barrel.
On iron in pigs or bars, castings for mills, and unboxed machinery - - - -	40 cts. per hundred
On hhds. and pipes of liquor, not over 120 gallons -	$5 00 per hhd.
On molasses and oil -	$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission.

THOMAS PURSE,
Gen'l Sup't Transportation.

SOUTH CAROLINA RAILROAD.—A PASSENGER Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily - - - - - -	$26 50
Fare through from Charleston to Huntsville, Decatur and Tuscumbia - - -	22 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic Railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

JOHN KING, Jr., Agent.

THE WESTERN AND ATLANTIC RAILROAD.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Railroad.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur, and Tuscumbia, Alabama, and Memphis, Tennessee.

On the same days the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT,
Chief Engineer

PATENT MACHINE MADE HORSE-SHOES.

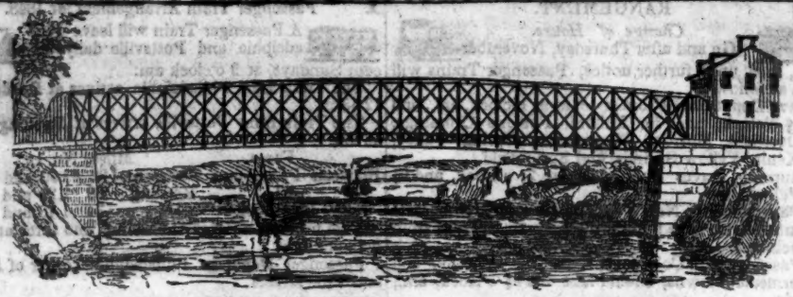
The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest. P. A. BURDEN, *Agent.*

Troy Iron and Nail Factory, Troy, N. Y.

TO LOCOMOTIVE AND MARINE ENGINE Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine, and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; hollow Pistons for Pumps of Steam Engines etc. Manufactured and for sale by

MORRIS, TASKER & MORRIS,
Warehouse S. E. corner 3d and Walnut streets,
Philadelphia.



RIDER'S PATENT IRON BRIDGE.

THE RIDER IRON BRIDGE having been fully tested on the Harlem Railroad, by constant use for about eighteen months, and found to answer the full expectations of its most sanguine friends, is now offered to the public with the utmost confidence as to its great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time is so arranged as to secure the combined principles of the *Arch, Suspension and Triangle*, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

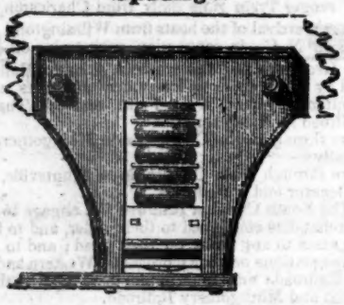
THE IRON RIDER BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, made under the above patent, at short notice, and at prices far *more economical* than the best wood structure, and on *certain conditions*, the first cost may be made the same as wood.

Models, and pamphlets giving full descriptions of the RIDER BRIDGE, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 74 BROADWAY, *up stairs*, or of W. RIDER & BROTHERS, 58 *Liberty Street*, where terms of contract will be made known, and where orders are solicited.

M. M. WHITE,
Agent for the Company.

November 25, 1848.

Fuller's Patent India-Rubber Springs.



THERE *can now be no ground of opposition whatever to these Springs*. The Commissioner of Patents has not only rejected the application for a Patent for a similar Spring, but *a Patent has just been granted for an entirely new species of India Rubber*, the quality of which can be surpassed by no other kind, as the experiments which have lately been publicly made, have fully proved. No extremes of heat or cold can effect it, nor will any amount of pressure permanently alter its shape. This Patent refutes the statement of the "New England Car Company" as to their sole right to use India Rubber.

The Spring (composed by alternate layers of India Rubber Discs and Metal Plates) is superior to any other form of Spring, for several reasons: It is the lightest, the most simple and most durable—there being less friction in this than in other kind; it can be regulated to any extent desired. A less quantity of Rubber is required in this form to make a good spring than in any other because each disc or ring of India Rubber is firmly supported by metal plates, and forms in itself a distinct spring—nor is any spiral spring required. The Patentee is consequently able to supply efficient springs at a less cost than any other parties can do. Purchasers are guaranteed in the use of these springs.

The New England Car Company have *no* right to make an Indiarubber Spring with a Bolt through the centre. All companies using such a spring are liable to an action.

Fuller's spring has been used nearly four years with complete success. It is applicable equally to Passenger and Freight Cars, to Locomotives and Tenders.—Bumpers and Draw Springs are always kept on hand, which merely require screwing to a car. It has lately been applied also to several kinds of *Machines*.

Action will be brought against all persons infringing upon these patents.

The subscriber will show Models and Drawings of the various modes of application to Cars, Machines, Omnibuses, &c.

G. M. KNEVITT, Agent.

Principal office, No. 78 Broad st., New York.

Branch office, Messrs. James Lee & Co.'s, No. 18 India Wharf, Boston.

Mr. Hale, the President of the Boston adn Worcester Railroad, wrote an article concerning Fuller's Springs. The "New England Car Company" take the liberty of publishing that article, omitting, however, a very important part; it is therefore given in full now, and the portion omitted by the New England Car Company is printed in italics, that the public may judge the manner in which this "company" pervert Mr. Hale's meaning.

[*From the Boston Advertiser of the 7th June*].

INDIA RUBBER SPRINGS FOR RAILROAD CARS.

"Of the numerous uses to which the wonderful elasticity and durability of India rubber, renders this material applicable, we are hardly aware of one, in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad.—It is there used not only for the springs on which the car rests, but for the springs attached to the draw bar, at each end of the car, to prevent any jar on the sudden commencement, or interruption of the motion of the car. For both these purposes it seems to be admirably adapted, and we do not learn that during that period in which it has been used, any defect has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think, than any other spring we have seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is also simple in its form and application, extremely light, and little liable to get out of repair. During the period of some months in which we have seen the springs in operation, there is no apparent wear or diminution of its efficiency. *Each spring is composed of several circular layers of rings of India rubber, a thin metallic plate of the same size being interposed between each of the layers. From the simplicity of its form, it cannot be expensive, and it admits of being made more or less elastic almost at pleasure. The invention, we understand, was first patented in England, where it has been introduced into general use on several of the principal railroads, and we have no doubt it will come into very extensive use in this country. The patent for this invention, we understand, has been granted to Mr. W. C. Fuller, in England and France, and also in this country. Mr Knevitt, of New York, is the agent for the patentee in the United States, and he has established a branch office for the supply of the article in this city, as may be learned from an advertisement in another column of this paper.*"

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

RAILROAD SCALES, ETC.

FAIRBANKS' RAILROAD SCALES.—THE subscribers are prepared to construct at short notice, *Railroad* and *Depot Scales*, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and dispatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon railroads, either in the United States or Great Britain;—and the managers refer with confidence to the following in the United States.

Eastern Railroad.	Boston & Maine Railroad.
Providence Railroad.	Providence and Wor. Road.
Western Railroad.	Concord Railroad.
Old Colony Railroad.	Fitchburg Railroad.
Schenectady Railroad.	Syracuse and Utica Road.
Balt. and Ohio Railroad.	Baltimore and Susq. Road.
Phila. & Reading Road.	Schuylkill Valley Road.
Central (Ga.) Railroad.	Macon and Western Road.

New York and Erie Railroad.

And other principal Railroads in the Western, Middle and Southern States.

E. & F. FAIRBANKS & CO.
St. Johnsbury, Vt.

Agents, { FAIRBANKS & Co., 81 Water st., N. York. / A. B. NORRIS, 196 Market st., Philadelphia.

April 22, 1848. 1y*17

RAILROAD SCALES.—THE ATTENTION of Railroad Companies is particularly requested to Ellicott's Scales, made for weighing loaded cars in trains, or singly, they have been the inventors, and the first to make Platform Scales in the United States;—supposing that an experience of *Twenty years* has given him a knowledge and superior advantage in the business.

The levers of our scales are made of wrought iron, all the bearers and fulcrums are made of the best cast steel, laid on blocks of granite, extending across the pit, the upper part of the scale only being made of wood. E. ELLICOTT has made the largest Railroad Scale in the world, its extreme length was One Hundred and Twenty Feet, capable of weighing ten loaded cars at a single draft. It was put on the Mine Hill and Schuylkill Haven Railroad.

We are prepared to make scales of any size to weigh from five pounds to two hundred tons.

ELLICOTT & ABBOTT,
Factory, 9th st., near Coates, cor. of Melon st.
Office, No. 3, North 5th street,
Philadelphia, Pa.,

ly25

MANUFACTURE OF PATENT WIRE ROPE and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers, etc, by

JOHN A. ROEBLING, *Civil Engineer*,
Pittsburgh, Pa.

These *Ropes* are now in successful operation on the planes of the Portage railroad in Pennsylvania, on the Public Slips, on Ferries, and in Mines. The first rope put upon Plane No. 3, Portage railroad, has now run four seasons, and is still in good condition.

AMERICAN RAILROAD JOURNAL.

PUBLISHED BY J. H. SCHULTZ & CO.

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☞ LETTERS and COMMUNICATIONS for this Journal may be directed to the *Editor*,

HENRY V. POOR, 54 WALL ST.